TEXTILE TECHNOLOGY DIGEST

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Abstracts

ORGANIC FIBERS I

Fiber production. Commonwealth production of industrial fibers. Anon. *Board of Trade J. 154,* No. 2683, 1017 (May 22, 1948).

Production figures relating to cotton, wool, silk, flax, hemp, jute and rayon in the British Commonwealth are summarized. TTD: 8-48

High polymers. Macromolecular chemistry and textiles. G. Champetier, Sorbonne, Paris. *Bull. de L'Institute Textile* No. 4, 115-35 (Dec. 1947).

The natural, artificial, and synthetic textile high polymers are discussed. TTD: 8-48

Vegetable fibers I 1

Carboxymethylated cotton. Partial carboxymethylation of cotton to obtain swellable fibers. J. David Reid & Geo. C. Daul, Southern Regional Lab. *Textile Research J. 17,* 554-61 (Oct. 1947).

By impregnating cotton with monochloroacetic acid and then treating the cotton with sodium hydroxide, the swelling capacity and water retention of the yarns are greatly increased. The strength, feel, hand, and moisture content of the treated yarns vary very little from ordinary mercerized cotton. Resistance to microbiological attacks may be increased by replacing the sodium of the partially carboxymethylated cotton with metals such as copper, mercury, or silver. TTD: 8-48

Cellulose structure. X-ray study of vegetable fibers. Bhupati Kumar Banerjee. *Ind. J. Physics 21,* No. 6, 259-66 (Dec. 1947).

X-ray studies of some vegetable fibers show that the orientation of cellulose crystallites is not the same in all cases. In some fibers, the major axis of the unit cell is almost parallel to the fiber axis and in others the major axis is at a spiral angle to the fiber axis. TTD: 8-48

Cotton. Cotton—versatile textile fiber. Earl E. Berkley, Natl. Cotton Council of Am. *Textile Research J. 18,* 71-88 (Feb. 1948).

A review of recent researches on cotton, including the origin, growth, structure, and natural variations of the fiber. The physical properties, spinning quality, and modifications by chemical and physical treatment of the fiber are also discussed. TTD: 8-48

Cotton fiber properties. Nitrogen content of cotton in relation to other fiber properties. Frank M. Eaton, Texas Agricultural Expt. Station & USDA. *Textile Research J. 17,* 568-75 (Oct. 1947).

By using simple correlation coefficients, comparisons are made between variations in the total nitrogen content of cotton fibers and variations in the physical properties of these fibers and their yarns. Methods and materials used in making this comparison are described and the results obtained are discussed. TTD: 8-48

Cotton in the Congo. The development of cotton growing in the Belgian Congo. V. H. Roggen. *Textielwezen 3,* No. 9, 116-19 (Sept. 1947).

Cotton from the Belgian Congo constitutes 35% of the net Belgian imports of this fiber. The cultivated area could be extended, but the scarcity of labor has checked the clearing of more land, and the Colonial Government prefers to increase the yield on the land now planted. The American variety, Triumph Big Boll, has been most successful, but the Inst. for Agronomic Studies in the Belgian Congo has established experimental stations and is testing new varieties. The lack of adequate transportation increase the costs, and the lack of standards is disadvantageous. The Belgian textile industry should encourage the growth of cotton in the Congo. TTD: 8-48

Cotton cleaning. Cotton cleaning apparatus. Eugene H. Brooks (to Continental Gin Co.). USP 2 440 139, Apr. 20, 1948.

This cotton cleaning apparatus is intended to be used in conjunction with a gin for cleaning lint cotton immediately after ginning. Cotton is fed to a circular gin-type saw wheel with beater bars spaced around its circumference for removing trash, motes, and other foreign matter. A larger diameter brush cylinder is utilized for removing the cleaned cotton from the saw blades.

WGM TTD: 8-48

Cotton harvesting. Cotton conveyor blower. Clarence R. Hagen (to International Harvester Co.). USP 2 440 770, May 4, 1948.

A cotton conveyor blower for conveying cotton from a mechanical field picking unit into a receptacle for transportation is constructed so that the seed cotton will be treated with sufficient gentleness to avoid damaging the seed.

WGM TTD: 8-48

Cotton harvesting. Machine for picking cotton. Jas. H., Jas. C., and Lloyd H. Hamner. USP 2 438 393, Mar. 23, 1948.

A machine for picking cotton from a row of cotton stalks by means of opposed power-driven belts is described. Two upwardly travelling endless belts have spindles and saw-toothed members on their surfaces to carry seed cotton to a storage unit. It is claimed the machine removes all the cotton from the plants and leaves the bare stalks.

WGM TTD: 8-48

Cotton harvesting. Spindle slats for cotton harvesters. John D. Rust. USP 2 440 450, Apr. 27, 1948.

Claims are made for a new design of spindle carrying slat which may be snapped on to the drive chain of the Rust cotton picking machine. The spindle carrying slat provides a means of determining the angular positioning of spindles both during picking and during the stripping process.

AFR TTD: 8-48

Filtering lint. Cotton gin. Jas. E. Melton. USP 2 441 203, May 11, 1948.

A filter screen is added to the conventional air blast gin to remove the lint which frequently clogs the saw nozzles.

WGM TTD: 8-48

Jute. On the size of micelles in jute fiber of different qualities and of known strength. S. K. Chowdhury & S. C. Sirkar. *Ind. J. Physics 22,* No. 1, 39-42 (Jan. 1948).

Results of x-ray analysis of raw jute fibers are tabulated. The strength of the fibers was measured and is expressed in terms of breaking load divided by mass per unit length. It was concluded that the strength of the fiber is partly determined by the length of the micelle along the beta-axis and the longer chain corresponds to the higher strength. TTD: 8-48

Ramie. Obtaining of ramie. Mark M. Wise. USP 2 440 562, Apr. 27, 1948.

Ramie fibers may be obtained by subjecting green ramie stems to a prolonged steam treatment at pressures not less than 15 pounds per square inch for a period of at least one hour, drying the treated stems, and separating the fiber from the woody portion. It is essential that the ramie stems be in a green state and that the stem treatment be followed by drying. TTD: 8-48

Bast fiber processing. Arrangement for driving the ventilator of a dust-removing device for a bast-fiber drawing frame or other machine. Franz G. Niebuhr. Ger. P. 719 166, Mar. 31, 1942. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Bast fiber processing. Device for obtaining fibers, capable of being spun from pre-cooked reeds, straw and the like. Georg M. Von Hassel. Ger. P. 714 754, Dec. 5, 1941. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Bast fibers. Procedure and device for obtaining fibers capable of being spun from fibrous-plant stalks. Sauter. Siemens-Schuckertwerke A. G. Ger. P. 726 399, Oct. 13, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Processing flax. Machine for the simultaneous removal of seeds and alignment of flax stalks. Maurice Soenens. Ger. P. 716 632, Jan. 29, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Processing wood fibers. Device for obtaining fibers capable of being spun from chemically disintegrated pieces of wood. Peter Janssen. Ger. P. 726 554, Oct. 15, 1942. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Animal fibers I 2

Protein fibers. The structure and elastic properties of protein fibers of the keratin-myosin-fibrinogen group. W. T. Astbury. *J. chim. phys. 44,* Nos. 1-3, 3-8 (Jan.-Mar. 1947).

A review of the work done in this field during the war, with 14 references. TTD: 8-48

Wool. Coiling of wool induced by certain reagents. Martin R. Frency. *Nature 160,* No. 4075, 799 (Dec. 6, 1947).

Merino wool fibers straighten out in a 1% solution of caustic soda at 20°C and then wind up closely, averag-

ing 15-20 turns per inch within 15 minutes. The direction of the coil reverses here and there along the length of the fiber. Large, irregular coils resulted from using the following solutions at 20°C: 1 and 3% potassium cyanide, 1% sodium thioglycollate, 0.125 and 0.33% sodium sulfide and 0.88 S. G. ammonium hydroxide.

TTD: 8-48

Wool cleaning. Webcrusher for worsted process. Anon. *Am. Wool Cotton Reptr. 62,* No. 24, 11-12, 48-9 (June 10, 1948).

Features of the Hoffman webcrusher are discussed, and a process for using webcrushers for complete elimination of the regular carbonizing process is described. Development of a continuous blending system and equipment for wool cleaning is also outlined.

TTD: 8-48

Wool scouring. Improved wool cleaning method. Anon. *Am. Wool Cotton Reptr. 62,* No. 23, 11-12 (June 3, 1948).

The continuous solvent process for scouring wool greatly improves the quality of the tops. Degreasing of wool, regaining the solvent, and separation of the grease can be accomplished more economically, more efficiently, and in a shorter time than with alkali and soap.

TTD: 8-48

Silk processing. Silk treatment. Ben W. Rowland & Douglas Fronmuller (to The Inst. of Paper Chemistry). USP 2 439 221, Apr. 6, 1948.

In the manufacture of silk, the chemical processing treatments are improved by substituting for the usual alkaline bath an emulsified acidic bath of pH between 3.0 and 5.5, containing sodium monoglyceryl-lauryl sulfate, mineral oil, sulfonated castor oil, and acetic acid.

MC TTD: 8 48

Silk bibliography. Bibliography of the technical literature on silk. F. O. Howitt. Hutchinson's Scientific and Technical Publications, London; 1947; 248 pp.; price: 21s.

Reviewed in *Nature 161,* No. 4099, 790 (May 22, 1948). TTD: 8-48

Artificial fibers I 3

Crimping process. Method and apparatus for crimping textile fibrous material. Alvin Lodge (to Am. Viscose Corp.). USP 2 435 891, Feb. 10, 1948.

Crimp of textile fibrous materials in the form of filaments, yarn, tow, or staple fibers may be accomplished by feeding yarn into the nip of 2 rolls of special design. The lower roll has radial ribs which extend to its surface. The soft yarn is fed into the nip of the rolls at a rate of speed which is greater than the surface speed of the rolls. The difference between the speed of the yarn and the surface speed of the rolls forces the yarn between the radial ribs of the lower roll. While held between the ribs of the bottom roll, the crimped yarn is hardened by a setting agent which is forced through the yarn and the ribs of the roll.

LCL TTD: 8-48

Porous extruded mass. Process of forming porous artificial masses. Orlando A. Battista (to Am. Viscose Corp.). USP 2 439 034, Apr. 6, 1948.

Heat coagulation of viscose monofil in an agitated hot ammonium sulfate bath is employed to form a spongy wad-like mass of light weight, good strength, and high liquid absorbency.

MC TTD: 8-48

Thread guide. Thread guide. Paul T. Jones (to Am. Bemberg Corp.). USP 2 431 695, Dec. 2, 1947.

Chemical deposits are prevented from forming on the guide rod in a wet spinning process by providing a rod designed to receive continuous treatment with a suitable solution to obviate the costly periodic replacement of the rods.

JHB TTD: 8-48

Viscose handling. Apparatus for handling viscose solutions. Hobart O. Davidson (to Am. Viscose Corp.). USP 2 439 619, Apr. 13, 1948.

In order to provide an adequate supply of ripened viscose for the feed tanks, a large number of ripening tanks as compared to the number of feed tanks are needed, because of the long periods of ripening, usually several days, required. The present invention provides a system for making it practical and economically feasible to handle the viscose in such a large number of tanks without encountering pumping difficulties resulting from long suction lines, and difficulties resulting from stagnation of the viscose in remote parts of the piping system, while withdrawing viscose from a given ripening tank.

TTD: 8-48

Artificial staple. Procedure for separating irregular staple lengths while cutting artificial filaments. Frank, Sächsische Zellwolle A. G. Ger. P. 723 240, July 31, 1942. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Rayon processing. Procedure for the after treatment of freshly spun artificial silk wound on unyielding perforated spools Hubert & Matthes. Ger. P. 704 537, Apr. 2, 1941. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947). TTD: 8-48

Rayons I 3 a

Rayon structure. Electron-microscopical examination of rayon. Chas. W. Hock, Hercules Powder Co. *Textile Research J. 18,* 366-71 (June, 1948).

Fibrils of a few hundred Angstroms in diameter may be seen on examining cuprammonium and viscose rayons with an electron microscope, using the metal shadow-casting technique. The surface of cuprammonium rayon fibers is found to be relatively smooth except for occasional markings, while the viscose rayon fibers are rougher and show an irregular net-like pattern.

TTD: 8-48

Crimping fibers. Artificial filament. Maurice P. Kulp & Wayne A. Sisson (to Am. Viscose Corp.). USP 2 439 813, Apr. 20, 1948.

In the spinning of composite filaments in which 2 viscose extrusions are joined laterally into a single filament by means of special spinnerets, permanent crimp is introduced by so choosing the 2 viscoses that they exhibit different degrees of shrinkage during coagulation or after coagulation and stretching. The composite filament is stretched before coagulation is complete, then allowed to relax, and is dried in the relaxed state.

MC TTD: 8-48

Crimping fibers. Crimped artificial filaments. Wayne A. Sisson (to Am. Viscose Corp.). USP 2 439 814, Apr. 20, 1948.

In the spinning of composite filaments by extruding 2 or more spinning materials from adjacent orifices in a special spinneret, permanently crimped fibers are prepared by combining different spinning materials, e. g., proteins, cellulose derivatives, nylons, vinyl resins, so chosen that they are mutually adherent in the final filaments, yet possess differences in shrinkage, swelling, extensibility, etc. The filaments, while in plastic form, are stretched beyond the elastic limit of one of the components and are allowed to set, either when relaxed or under tension.

MC TTD: 8-48

Crimping fibers. Composite thermoplastic fibers. Wayne A. Sisson. (to Am. Viscose Corp.). USP 2 439 815, Apr. 20, 1948.

In composite filaments of the type described in USP 2 439 814, crimpability is obtained by choosing different thermosplastic spinning materials which have different elastic and thermal-softening properties. The composite filament, in a plastic condition, is strained internally, as by stretching, allowed to set under tension, and caused to develop crimp by heating to a temperature at which one component shrinks but the other does not.

MC TTD: 8-48

Extrusion device. Apparatus for producing artificial filaments. Wayne A. Sisson & Wesley L. Webb (to Am. Viscose Corp.). USP 2 440 761, May 4, 1948.

Novel artificial filaments are claimed to be manfactured by a new type of extrusion device. Essentially the face of the extrusion device is divided into segments. Through each segment, a different type of filament-forming fluid may be forced. An example might be 2 or more types of viscose, or normal types or those containing pigments. Arrangements of the segments or compartments of the extrusion device produces a filament containing a core of one type of filament-forming material or a composite filament whose lateral surfaces are composed alternately of the component filament-forming material.

LCL TTD: 8-48

High-tenacity yarn. Method of producing artificial yarn. Emerson A. Tippetts (to E. I. du Pont de Nemours & Co.). USP 2 439 829, Apr. 20, 1948. Reference is made to USP 1 901 007, USP 1 996 989, USP 2 248 862 & USP 2 1 977 611.

Improvement in the manufacture of high-tenacity regenerated cellulose yarn from viscose by the hot dip method are claimed. Freshly spun viscose rayon yarn is stretched between 2 positively driven feed wheels, the yarn passing one or more times around the first feed wheel and a plurality of times around the second feed wheel. A total tension of the order of 1 gram per denier is imposed upon the yarn. Bath temperatures are maintained at 90-95°C.

LCL TTD: 8-48

Rayon processing. Unwinding packages of rayon. Paul W. Markwood (to Am. Enka Corp.). USP 2 432 916, Dec. 16, 1947.

A series of upwardly slanted needles passing inwardly through the thread body of rayon yarn cakes permits the rayon yarn to be unwound from the interior of hollow spun cakes.

JHB TTD: 8-48

Rayon processing. Apparatus for ageing solutions of colloidal material. Robin H. K. Thomson & Wm. Sever (to Imperial Chemical Industries, Ltd.). USP 2 435 416, Feb. 3, 1948.

This invention covers apparatus and a method for ageing a stream of organic colloidal material to secure a uniform viscosity and rate of flow to the spinnerets in the

process of producing extruded fibers as in rayon manufacture.
VMG TTD: 8-48

Viscose delusterant. Terpene derivatives and method of producing the same. Wm. O. Israel (to Industrial Corp.). USP 2 440 093, Apr. 20, 1948.

The formation of water dispersible compounds, which have value as dispersing, wetting or cleansing agents, is described. These compounds are particularly recommended as dispersing agents for delusterants for viscose. The substances are produced by the reaction of at least 3 mols of an alkylene oxide with one mol of an unsaturated or hydroxy terpene in the presence of an alkaline catalyst. Temperatures of 125-150°C and pressures of 50-100 psi are usually used for the reaction.
GNR TTD: 8-48

Viscose processing. Production of viscose rayon. Frederick R. Millhiser (to E. I. du Pont de Nemours & Co.). USP 2 440 057, Apr. 20, 1948.

Viscose is stretched in the coagulation bath before coagulation is complete, then maintained in the bath at a very low tension, and finally stretched at least 25%.
MC TTD: 8-48

Viscose solution. Spinning solution and a process of making it. Wm. O. Israel (to Industrial Rayon Corp.). USP 2 440 094, Apr. 20, 1948.

It is claimed that a superior viscose spinning solution is obtained through the addition of a delusterant, such as titanium dioxide or a mineral oil, and a dispersing agent of the type produced by the reaction of an alkylene oxide with an unsaturated or hydroxy terpene as described in USP 2 440 093. Suitable quantities, 0.02% to 0.2%, of the above dispersing agent are processed in a colloid mill with the delusterant and sufficient water to form a finely divided dispersion. This dispersion is mixed with the viscose solution prior to spinning. The rayon thus produced is uniformly dull in appearance and of uniform tensile strength due to an even distribution of the delusterant.
GNR TTD: 8-48

Wool-like viscose. Process of producing medullated artificial filaments. Elvin L. Coe (to Am. Viscose Corp.). USP 2 439 039, Apr. 6, 1948.

Wool-like medullated filaments and fibers from viscose are produced by adding a soluble salt, generally sodium sulfate, to the viscose prior to extrusion of the latter into the spinning bath. The spinning bath should contain controlled amounts of sulfuric acid and zinc sulfate, preferably from 8-12% sulfuric acid and from 0.5-1.25% zinc sulfate. Amounts of sodium sulfate added

to the spinning bath vary from 21-27%. After coagulation of the viscose, the filaments are withdrawn and subjected to stretching to give a 15-20% stretch. It is claimed that the stretching ruptures or cracks the outer portion of the filament, giving a wool-like appearance. These artificial filaments have a horseshoe shaped cross section.
CCJ TTD: 8-48

Viscose yarn. Method and apparatus for producing and stretching artificial yarn. Howard W. Swank (to E. I. du Pont de Nemours & Co.). USP 2 440 226, Apr. 20, 1948.

In spinning viscose rayon, it is important to impose as high a tension as possible without causing breaks on the yarn before windup. Tension is applied by passing freshly spun viscose rayon yarn over and around a feed wheel and under a freely rotatable snubber one or more times so that the yarn is prevented from tracking on itself. The yarn is impregnated with a hot aqueous liquid on the feed wheel. The peripheral speeds of the feed wheels are such as to impose in the yarn a total tension of the order of 1 gram per denier.
CCJ TTD: 8-48

Fiber from alkali cellulose. Machine for reducing alkali cellulose or the like to fibers. Schieber & Eppler. Werner & Pfleiderer. Ger. P. 721 688, June 13, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Softening rayon. Device for opening and softening after-treated and dried artificial thread strands. Schulte. Thüringische Zellwolle A. G. Ger. P. 716 279, Jan. 16, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Spinning artificial fibers. Spinning pot, particularly for rayon, with interchangeable bottom. Schultz. Siemens-Schuckertwerke A. G. Ger. P. 728 739, Dec. 3, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Spinning ribbon. Procedure for the direct manufacture of a spinning ribbon from rayon staple. Steimmig. Zellwolle- und Kunstseide-Ring, GmbH. Ger. P. 729 050, Dec. 9, 1942. *Bibl. Sci. Ind. Reports 5,* 463 (May 2, 1947). TTD: 8-48

Spinning viscose. Device for spinning artificial fibers from viscose solutions according to the tension spinning process. Schmidt. Thüringische Zell-

wolle A. G. Ger P. 716 633, Jan. 26, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

TTD: 8-48

Stretching rayon. Three-roller unit. Abele. Süddeutsche Zellwolle A. G. Ger. P. 715 040, Dec. 12, 1941. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

A unit for stretching endless synthetic-thread ribbons. Drawing included. TTD: 8-48

Viscose rayon. Device for the aftertreatment of viscose artificial fiber. Uytenbogaart. Vereinigte Glanzstoff-Fabriken A. G. Ger. P. 711 207, Sept. 27, 1941. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Protein fibers — I 3 b

Protein fibers. Development and processing of synthetic protein fibers. Morris Willatt. *Textile Age 12,* No. 2, 88-90 (Feb. 1948).

Better synthetic protein fibers are predicted as a result of research now under way. Additional fields of study to improve these fibers are suggested. TTD: 8-48

Zein fibers. Acetylation of zein fibers. Cyril D. Evans, C. Bradford Croston, & Cecil Van Etten, Northern Regional Lab. *Textile Research J. 17,* 562-7 (Oct. 1947).

A method of acetylating zein fibers with acetic anhydride, using sodium acetate or sulfuric acid as a catalyst, is described. Acetylation increases the water resistance, improves the softness and boil resistance, whitens, and decreases the dye uptake of zein fibers. TTD: 8-48

Synthetic fibers — I 4

Electrical insulation. Vinyl covers, wires, yarns. Anon. *Modern Plastics 25,* No. 3, 112 (Nov. 1947).

Weaving yarns or insulated wires are being produced by a new process called tensolizing, which uses vinyl film to cover rayon, cotton, silk, fiberglas or wire cores, and the end product can be made flexible or stiff. Yarn can be given 100% dimensional stability or considerable elasticity. Hand, drape, and other characteristics can be varied by changing the vinyl formulation or wall thicknesses. Color can be incorporated by using colored vinyl film. TTD: 8-48

Nylon structure. Structure of nylon. Near infra-red absorption of nylon films: dichroism and rupture of N-H . . . O bonds on melting. Leonard Glatt & Jos. W. Ellis (Letters to the Editor). *J. Chem. Physics 16,* No. 5, 551 (May, 1948).

Spectrograms made of molten nylon specimens kept at 300° C gave unmistakable evidence of rupture of the intermolecular N-H . . . O bonds. Specimens kept at 200° C, below the 260° C melting point, gave evidence that some of the intermolecular bonds rupture before melting. TTD: 8-48

Nylons. Polyamides in Germany: preparation and application. Based on information contained in the following Publication Board reports: 949, 1069, 1341, 1342, 2437, 7416, 11407, 12467, 25553, 25642, 28316, 32266, 32548. *Modern Plastics 25,* No. 8, 148-50, 216, 218, 220, 222-4, 226-7 (Apr. 1948).

The general trend in new polyamides in Germany was in the direction of artificial leather and films, rather than fibers. All the dicarboxylic acids containing from 2 to 16 carbon atoms and the corresponding diamines were systematically examined. The most interesting developments were based on ketopimelic acid, p-phenylene dipropionic acid, tetramethylene diamine, N-methylbis amine and p, p′-diamino dicyclohexyl methane, usually as partial components of polyamides. I. G. Farbenindustrie concentrated their production of polyamide fibers on Perlon L, made with the polymer of coprolactam, and to a lesser extent on Perlon T, made with adipic acid and hexamethylene diamine. Perlon staple improves the wearing qualities of fabric when it is blended in small quantities with viscose staple, cotton and wool. TTD: 8-48

Vinyl resin filaments. Production of textile filaments, fibers, and yarns. Theophilus A. Feild, Jr., Edward W. Rugeley & John L. Petrokubi (to Carbide & Carbon Chemicals Corp.). USP 2 438 968, Apr. 6, 1948.

Copolymer vinyl filaments and yarns such as are produced from vinyl chloride with acrylonitrile or with vinyl acetate are improved in softness and in "loop-break" strength by depositing on the filaments or yarns small amounts of finely divided inert insoluble solid materials prior to the high temperature stretching of the filaments or yarns. Colloidal clay such as bentonite, colloidal silica, or barium sulfate are among the useful treating agents. These materials are thought to function by reducing the adhesion between individual filaments which normally occurs in the hot stretching treatment.

WPU,jr. TTD: 8-48

Spinning plastics. Spinning device for plastic materials which are melting off a bar. Friederich, I. G.

Farbenindustrie A. G. Ger. P. 721 687, June 12, 1942. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Synthetic thread hardening. Procedure for the continuous hardening of synthetic threads made by the tension-spinning process and which are not yet completely coagulated. Schürmann & Langenbucher. Ger. P. 715 307, Dec. 18, 1941. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Nylon applications. Nylon textile fibers in industry. Nylon Division, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.; 30 pp.

Reviewed in *Modern Plastics 25,* No. 7, 138 (Mar. 1948). TTD: 8-48

Synthetic fibers industry. The synthetic fibers industry. Geo. S. Armstrong & Co., Inc., 52 Wall St., New York.

Reviewed in *Modern Plastics 25,* No. 9, 198 (May, 1948). TTD: 8-48

Fiber applications I 5

Plastics. Cellulosic plastics. Marie Bentivoglio & Millard Demarest. *Product Eng. 19,* No. 5, 85-91 (May, 1948).

The properties and applications of the most commonly used cellulosic plastics, cellulose nitrate, acetate, acetate-butyrate, propionate, and ethyl cellulose, are discussed. Design factors, including machinery and finishing, are noted. TTD: 8-48

Plastics. Fillers for ureas and melamines. Prescott Fuller. *Modern Plastics 25,* No. 4, 132, 238 (Dec. 1947).

Alpha-cellulose filler has been found to be most compatible with urea-formaldehyde resins. Melamine-formaldehyde resins are compatible with a wide range of cellulosic and mineral filler materials, including chopped cotton cloth and cotton flock. TTD: 8-48

Raw cotton processing. Sulfuric acid steep at elevated temperatures for gray cotton fabrics. R. E. Hudson, Jr. & Howard M. Waddle, West Point Mfg. Co. *Textile Research J. 18,* 232-6 (Apr. 1948).

An investigation of the effect of sulfuric acid on the constituents of raw cotton fiber is described. Results show that the sulfuric acid steep, under controlled conditions, may be conducted at elevated temperatures without fiber damage, with a reasonable desize efficiency, and in a shorter time. TTD: 8-48

Cellulosic plastics, No. 4. Issued by the Cellulose Products Dept., Hercules Powder Co., Inc., Wilmington, Del. 26 pp.

Reviewed in *Modern Plastics 25,* No. 10, 162 (June, 1948). TTD: 8-48

INORGANIC FIBERS II

Fiber separation. Apparatus for preparing finely divided fiber stock for fluid conveyance. Geo. W. Luhrmann. USP 2 439 014, Apr. 6, 1948.

A mobile apparatus is devised to effect complete disintegration of fiber clods, such as asbestos and fiberglas, into loose particles, capable of being conveyed by a current of air. The apparatus employs a combination of beater and shaker motions. Centrifugal blowers move the finished material and disperse this material, together with activating agent, against any desired surface.
WGM TTD: 8-48

Glass fibers. Apparatus for manufacturing fibrous glass. Games Slayter (to Owens-Corning Fiberglas Corp.). USP 2 431 205, Nov. 18, 1947.

Fine glass fibers are produced in a single operation in which finely divided batch material is reduced to a molten state and this molten liquid is formed into fibers by centrifugal attenuation. TTD: 8-48

Fiberglas—reinforced plastics. Owens-Corning Fiberglas Corp. Toledo, Ohio. 36 pp.

Reviewed in *Mech. Eng. 70,* No. 3, 246-7 (Mar. 1948).

FIBER TO YARN III

Fiber preparation III 1

Carding-spinning machinery. Unique demonstration plant. Anon. *Am. Wool Cotton Reptr. 62,* No. 22, 11-12, 45-6 (May 27, 1948).

A description is given of the picking, carding, and spinning equipment of a machinery demonstration plant (Duesberg-Bosson Woolen Spinning Co.).
TTD: 8-48

Pin drafter. Pin control in worsted spinning. Jas. R. Longstreet, Warner & Swasey Co. *Am. Wool Cotton Reptr. 62,* No. 26, 75, 77, 79, 97, 99 (June 24, 1948).

The new Pin Drafter machine reduces the number of operations required to process worsted yarn, improves the quality of product, and may be used on the Bradford, French, and American systems. Details of the construction and operation of the Drafter are given.
TTD: 8-48

Pin drafter. Applications of pin drafter disclosed. Jas. R. Longstreet. *Textile World 98,* No. 7, 133-4, 188, 194, July, 1948.

Many difficulties in handling short fibers in a worsted-type yarn are claimed to be overcome by a new American system developed by Warner & Swasey. Counts through 32s are claimed in several mills with 3 operations of drawing, 1 roving, and 1 spinning. Fibers between 1 inch and 22 inches long have been handled successfully. The main points of difference beween the Warner & Swasey pin drafter and a gill box are extra-long faller bed, 7½ inch, with 48 fallers holding the stock at all times.

LCL TTD: 8-48

Cleaning seed cotton. Cotton cleaning attachment for harvesters. Joshua C. Conrad. USP 2 439 718, Apr. 13, 1948.

This invention describes a cotton cleaning machine constructed to be attached to a tractor and used in conjunction with harvesting equipment. The machine consists of a series of beater cylinders and impaling drums which separate cotton from trash such as sticks, limbs, burs, and stalk and produce a recognizably higher-grade product.

WGM TTD: 8-48

Cleaning seed cotton. Lint cleaning apparatus. Albert S. McGinnis & Harry Berry (to Industrial Patents Corp.). USP 2 439 179, Apr. 6, 1948.

This invention consists of a special baffle separator in the suction line of a conventional cyclone separator used in cleaning cottonseed lint. By the addition of a small, simple and inexpensive baffle, a clean, high quality product can be produced on existing apparatus.

WGM TTD: 8-48

Comber. Combing machine for textile fibers. John W. Nasmith. USP 2 440 870, May 4, 1948.

The piecing up motion of a comber is improved by controlling the fibers as they leave the detaching rolls. Soft leather aprons are used to support the fibers as they leave the detaching rolls and are carried to the trumpet.

JAW TTD: 8-48

Conditioning fibers. Means for conditioning textile fibers. Arthur G. Hill. USP 2 440 399, Apr. 27, 1948.

A method is described for applying oil or dye to cotton or other fiber processed on cotton-type machinery. One or more tubular applicators extend at an angle well down into the thick mass of fiber conveyed to a beater section in a picker. The liquid, applied to the fibers, flows through the tubular applicators by force of gravity from an overhead supply tank.

JED TTD: 8-48

Conditioning fibers. Means for conditioning textile fibers. Arthur G. Hill. USP 2 440 400, Apr. 27, 1948.

Textile fibers are conditioned with oil or dye applied in drip or atomized form to the interior of a lap while the fibers are at this stage of processing. A plow-shaped element is used to part the lap evenly for the introduction of the conditioning liquid.

WGM TTD: 8-48

Cotton opening. Cotton picker and similar machine. Robt. S. Curley (to Saco-Lowell Shops). USP 2 435 938, Feb. 10, 1948.

Cotton is delivered to an upstroke beater in a picker by means of a feed mechanism placed above the beater. A supplemental roll, placed closely adjacent to the feed roll in the mechanism delivering cotton, is positioned closer to the beater than the feed roll and controls the movement of the fiber away from the beating point.

TTD: 8-48

Sliver condenser. Drawing mechanism for spinning and roving frames. Eugene C. Gwaltney, Robt. M. Jones & Jos. Rabasa (to Saco-Lowell Shops). USP 2 430 611, Nov. 11, 1947.

Small condensers or trumpets are mounted at the forward end of the zone in which the main draft occurs in drafting cotton sliver on roving or spinning frames to gather in the stray fibers which splay out from the edges of the strand being drafted.

JHB TTD: 8-48

Uniform laps. Method of forming laps. Louis P. Miller (to Miller-Jonas Holding Co., Inc.). USP 2 431 066, Nov. 18, 1947.

A lap of substantially uniform density is formed by a mechanism in which eddy or turbulent air currents are avoided in a blower lap former in the zone where the air is carrying the textile fibers, more especially textile fibers which may comprise rabbit fur.

JHB TTD: 8-48

Uniform twist. False twist tube for use in preparatory and spinning machines. Jos. Noguera (to Casablancas High Draft Co., Ltd.). USP 2 430 944, Nov. 18, 1947.

A leaf spring is positioned with respect to a fixed abutment in a false twist tube to provide the necessary zig-zag path and thereby impart a uniform amount of twist.

JHB TTD: 8-48

Spinning III 3

Cotton sliver treatment. Studies of treatment of cotton in sliver form. II. Effect of Syton: spinning

studies. Edw. A. Murray, John W. Moore & Simon Williams, Natl. Cotton Council & Univ. of Texas. *Textile Research J. 17,* 616-21 (Nov. 1947).

The treatment of drawing sliver and yarn with Syton (colloidal silica) is discussed; and the effects of temperature and humidity variations during spinning of the treated sliver are outlined. (For Part I see TTD: *4,* 252). TTD: 8-48

Spinning characteristics. Cotton's spinning characteristics. John F. Bogdan. *Am. Wool Cotton Reptr. 62,* No. 21, 53, 55, 57 (May 20, 1948).

Strength and cohesion of the fiber and evenness of the yarn, as well as the relationships between count strength and twist, are the factors needed to predict the yarn strength of cotton. The curve obtained by count strength and twist relationships may be used to determine the spinning characteristics of cotton. TTD: 8-48

Spinning wool. Woolen-spinning mill is Belgian equipped. Gustav Zellnik. *Textile World 98,* No. 7, 104, 105, 204-10, July, 1948.

A pilot spinning unit has been opened in Jefferson, Mass., by Duesberg-Bosson of America, Inc. The mill is set up to demonstrate the machinery now being made in the United States by this company and to spin raw material of prospective machinery buyers to show the results that can be achieved. The machinery in the mill was made in Belgium but is identical with equipment to be produced here. Machines of interest include a versatile picker with 2 types of stripper rolls, a 78¾-in. wide card with cylinder speed of 130 rpm, and tape condensers producing up to 184 good ends. Another interesting feature is the mounting of the cards over pits, permitting inspection, reducing height, and reducing waste in the room.
LCL TTD: 8-48

Spindle clutch. Bobbin clutch. John J. Pichetti. USP 2 442 247, May 25, 1948.

A centrifugal clutch is applied to a spindle to secure a bobbin or other thread carrier on the spindle when it rotates. TTD: 8-48

Spinning frames. Creel. Chas. Chipman (to Haytock Silk Throwing Co.). USP 2 432 284, Dec. 9, 1947.

Structural refinements on a ring spinning machine enable the conversion of multiple filament threads into yarns of a definite twist in a single continuous operation.
JHB TTD: 8-48

Slotted bobbin. Method of starting thread on bobbins.

La Verne R. Graybeal (to North American Rayon Corp.). USP 2 431 323, Nov. 25, 1947.

A thread collecting bobbin is equipped with a slotted flange into which the end of the thread is introduced, thereby maintaining this end or "tail" wholly outside of the thread package.
JHB TTD: 8-48

Twisting. Twisting and winding apparatus for transfer tail. Wm. J. Elvin & Elmer R. Stahl (to Celanese Corp. of Am.). USP 2 432 564, Dec. 16, 1947.

A mechanism employed in connection with yarn twisting and winding apparatus for forming a magazine wrap or transfer tail on a yarn package.
JHB TTD: 8-48

Twisting. Apparatus for twisting and winding yarn. Pedro F. Martinez. USP 2 431 617, Nov. 25, 1947.

Yarn fed into the interior of a rotating receptacle, after receiving twist, is wound, by centrifugal force, into parallel layers against the interior walls of the container. After being spun the yarn is wound onto spools.
JHB TTD: 8-48

Cutting knots. Device for catching and cutting off knots and the like in running, synthetic, wet thread ribbons. Kern. Ger. P. 727 585, Nov. 6, 1942. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Tensioning device. Tension appliance for bobbin frame machines for utilizing elastic fibers. Textilwerk GmbH. Ger. P. 718 990, Apr. 15, 1942 4 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

SPINNING RAYON STAPLE ON COTTON SYSTEM. Anon. Am. Viscose Corp., Textile Research Dept., Marcus Hook, Pa.

Reviewed in *Textile Research J. 18,* 315-16 (May, 1948). TTD: 8-48

Winding III 4

Package winding. Machine for winding yarn. John P. Mackie (to Jas. Mackie & Sons, Ltd.). USP 2 431 876, Dec. 2, 1947.

A traverse motion for winding machines consists of a grooved roller with 2 oppositely directed spiral grooves extending from an intermediate point out toward the ends of the roller, together with a suitably placed guide

eye and permits more even winding of either parallel or tapering yarn packages.
JHB TTD: 8-48

Winding. Machine for winding bobbins. Brooks Marcellus (to Barber-Colman Co.). USP 2 439 519, Apr. 13, 1948.

Filling bobbins for weaving in a loom are rewound with yarn from cones or tubes by a mechanism which automatically supplies empty bobbins to the winding spindle after removing the full bobbin.
JAW TTD: 8-48

Winding tension device. Tension device for winding machines. Ernest R. Swanson (to Universal Winding Co.). USP 2 432 696, Dec. 16, 1947.

A differential tension-device automatically regulates the tension on the yarn during delivery to winding machines or in other transfer processes. In addition, the tension-disk pressure against the strand is automatically reduced as the diameter of the package increases during winding to permit constant yarn tension.
JHB TTD: 8-48

Winding tension device. Winding machine. Leon A. Hickok (to United Shoe Machinery Corp.). USP 2 430 507, Nov. 11, 1947.

A winding machine is equipped with a spring-operated cutter for severing the thread when excessive tension occurs.
JHB TTD: 8-48

Yarn. Apparatus for making coiled yarn. Thos. J. Rhodes (to U. S. Rubber Co.). USP 2 432 935, Dec. 16, 1947.

A fixed upright spindle provided at one end with a mandrel having a shoulder and a tapered needle is coupled with a means for winding yarn about the needle adjacent to the shoulder, each new coil crowding the others along the needle to produce a coiled coreless yarn.
JHB TTD: 8-48

Conveying empty spools. Device on automatic cop spool machines for conveying empty spools to a spool carrier for removal to the point where they will be wound. Schweiter Maschinenfabrik A. G. Ger. P. 707 250, June 17, 1941. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawings included. TTD: 8-48

Winding yarn. Winding device with swingable stopping props for yarn-coil shells. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 705 560, May 2,

1941. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).
Drawing included. TTD: 8-48

Yarn processing III 5

Carbide thread guide. Pigtail thread guide. Geo. F. Taylor (to Carboloy Co., Inc.). USP 2 431 150, Nov. 18, 1947.

A pigtail thread guide with a wearing surface of hard metal carbide permits the insertion of thread from either side, while a greater guiding surface is provided for the yarn because the round wire in the pigtail is bent so that it presents an elliptical cross section to the yarn in process.
JHB TTD: 8-48

Rayon yarn treatment. Apparatus for treating yarn packages with fluids. Wayne A. Mulligan & Wm. Kernan (to Skenandoa Rayon Corp.). USP 2 439 314, Apr. 6, 1948.

Fluid treatment of rayon yarn packages is achieved by a device which holds several such packages in a stack. Each package may be held in a container which will nest in 2 other containers above and below it, or they may be separated by adequate spacer plates. A perforated column or other means for conveying the fluid is passed through the center of the stack and a venting valve is installed at the top. The cakes are held in position by a suitable clamping mechanism.
LCL TTD: 8-48

Thread drying. Apparatus for drying thread by conduction. Richard W. Stanley (to Am. Viscose Corp.). USP 2 440 159, Apr. 20, 1948.

Running lengths of filamentary material are dried under a light but constant tension prior to collection in package form so that uniform and free shrinkage is possible throughout the length of the filament during drying. Means are provided for collecting dried length of filamentary material and for automatically adjusting the rate of collection to compensate for variations in tension. Heat for drying is supplied by any smooth heated surface.
CAC TTD: 8-48

Warp drying. Warp drier with automatic control means. Paul R. Rose (to Uxbridge Worsted Co., Inc.). USP 2 442 148, May 25, 1948.

A hot air warp drier incorporates controls for regulating of the speed of travel of the material through the drying chamber, the temperature of conditioning air introduced into the chamber, and the volume of heated air brought into contact with the material within the chamber in accordance with the speed of travel of the

material. Means are provided for measuring the moisture content of the material as it leaves the drying chamber.
CAC TTD: 8-48

Yarn cone support. Yarn holder support. Carl Joseph. USP 2 432 904, Dec. 16, 1947.

A support is designed to be adaptable to a wide range of sizes and shapes of yarn cones and also to accommodate tubular types of yarn packages.
JHB TTD: 8-48

Yarn products III 6

Pile materials. Pile materials and production thereof. Frederick G. Dodge (to Celanese Corp. of Am.). USP 2 438 156, Mar. 23, 1948.

Yarns or filaments composed of a thermoplastic material are made into tufts of pile materials. A group of parallel filaments are suitably enclosed in paper or cloth wrappings and set in a miter box. A taut wire of high electrical resistance is heated to high temperature by an electric current. The hot wire fuses and severs the projecting filaments as it passes through the bundle to produce one tuft of pile material. A knife then shears the fused end from the bundle of projecting fibers to produce another tuft of pile material. TTD: 8-48

Cord manufacture. Method of manufacturing wick-like cords. Mechanische Weberei Altstadt GmbH. Ger. P. 693 193, July 16, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947). TTD: 8-48

Yarn applications III 7

Tire cord. Tire cord and method of manufacture. Geo. P. Standley & Kenneth M. McLellan (to Industrial Rayon Corp.). USP 2 436 978, USP 2 438 979 & USP 2 436 980, Mar. 2, 1948.

A cord which adheres satisfactorily to a rubber structure and which has high flex and high fatigue life is made from yarns which have been treated with a composition so as to minimize the loss of strength in the yarn due to the twisting operation. The tire cord has a denier of at least 500, and is made from twisted filamentary material which has been treated with a composition of an oil, an ester of a fatty acid containing at least 12 C atoms, and a polyhydric alcohol such as the hexahydric alcohols and their anhydro-derivatives. The oil is present in the composition in a concentration of at least 5% of the aggregate weight of said oil and ester. The ester component has a melting point of at least 30°C.
RJB TTD: 8-48

Insulating cord. Machine for manufacturing braided insulating cords. Wilhelm Steeger. Ger. P. 721 369, June 3, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947). TTD: 8-48

Threading needles. Threader for sewing needles. Ernst Sommer. Ger. P. 717 713, Feb. 20, 1942. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

YARN TO FABRIC IV

European equipment. Pick-finding devices developed in Europe. *Textile World 98,* No. 7, 112, 113, 220, 222, July, 1948. Report of talk by C. W. Bendigo before the June meeting of the Am. Assoc. of Textile Technologists.

Highlights of European equipment and operations as reported by Mr. Bendigo include the new French circular loom, various pick-finding mechanisms for looms, elaborate spinning frames for high-quality Swiss fabrics, and the new Hibbert slasher dryer. It is reported that Europeans favor hot air slashers, particularly for use with rayon. The Hibbert slasher dryer is such a device. It is claimed that the drying chamber can be cooled in a matter of 2 seconds. The design includes 24 steps of take-up tension.
LCL TTD: 8-48

Yarn preparation IV 1

Slasher. Electric drive produces slasher improvement. E. J. Eaddy. *Textile World 98,* No. 7, 139, 141, 218, 220, July, 1948.

Electrically driven slashers, controlled by the Moist-O-Graph controllers, are claimed to operate successfully on 1400 ends of 14s cotton at 75 yd. per min. with increased production of 25 to 30% and increased weaveroom efficiency of 0.5 to 3.0%. Constant tension is maintained throughout by a variable speed d. c. motor.
LCL TTD: 8-48

Slasher creels. Slasher and slashing I. R. A. Silcox. *Textile Age 12,* No. 2, 48, 50, 52-4, 56 (Feb. 1948).

A review is made of the different types of creels used on slashers, including the over-and-under creel, upright creel, inclined creel, selvedge creel, and a creel which feeds the warp forward at a constant speed at all times. The use of antifriction bearings and drag mechanisms to maintain a more even tension on the beams is also discussed. TTD: 8-48

Cutting filaments. Device for cutting continuous artificial filaments and subsequently processing by a

loosening or packing machine. Robt. Meyer & Paul Liebscher. Ger. P. 728 305, Nov. 25, 1942. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Weaving IV 2

Gauge fabrics. Leno Weaving. A. van Cauwenberghe. *Textielwezen 3,* 133-38 (Sept. 1947); *in Flemish.*

The methods of weaving are described and illustrated with 7 diagrams. TTD: 8-48

Loom adjustments. Proper loom adjustment eliminates "bird's-eyes." Albert Frantz. *Textile World 98,* No. 7, 110-11, July 1948.

The 3 principal causes of the defect commonly known as "bird's-eyes" are (1) improper warp tension, (2) improper position of whiproll and (3) poor timing of the shed. Upon starting a new loom beam, tension should be added to the warp gradually until the proper number of weights has been placed on it. The location of the whiproll should be properly set for the weave design desired. Also, the timing of the shed should be checked, whenever weaves are changed, and the proper time set.

LCL TTD: 8-48

Selvedge defects. Selvedge imperfections. II. Geo. Creasey. *Textile Age 12,* No. 2, 66-70 (Feb. 1948).

The importance of proper yarn tensioning in preventing edge loops along the selvedge is discussed. New yarns, weave changes, and high-speed looms present problems in attaining neat, even selvedges. (For Part I see TTD: *5,* 165). TTD: 8-48

Laminated picker stick. Picker stick. Geo. J. Muller (to Taylor Fibre Co.). USP 2 440 181, Apr. 20, 1948.

A picker is designed to have the desired qualities of a hickory stick with rigidity to throw the shuttle but with more shock absorbing ability. The laminated stick is comprised of a body member, a relatively thin facing member, both formed of molded fibrous material with a strip and a series of strips of rubber between the body member and the facing strip and formed into a unit by a thermosetting resin.

JED TTD: 8-48

Pneumatic thread holder. Pneumatic thread holder for looms. Leslie J. Hooper & Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 431 556, Nov. 25, 1947.

A pneumatic thread holder for looms is designed so

that the intake mouth opens only for a short interval of time in order to permit the use of a smaller air pump.

JHB TTD: 8-48

Shuttle eye. Self-threading shuttle eye. Walter F. Daboll (to Watson-Williams Mfg. Co.). USP 2 439 158, Apr. 6, 1948.

A shuttle eye of the self-threading type, designed to prevent unthreading, is provided with a gate or trap which operates in conjunction with an electric weft detector and opens as required for weft replenishment.

TTD: 8-48

Looms IV 2 a

Carpet loom shuttle. Shuttle for carpet looms. Isaac B. Bassindale. USP 2 439 594, Apr. 13, 1948.

A shuttle for a carpet loom is designed to hold more yarn and permit it to be unwound at an even tension throughout the entire yarn package. A solid cop of yarn is wound without the use of a pirn, tube, or bobbin to insure more yarn in the package. The shuttle is provided with a tension element which puts a drag on the yarn as it is drawn from the cop.

JAW TTD: 8-48

Dobby knife connector. Dobby knife connector. Chas. A. Gunn. USP 2 439 973, Apr. 20, 1948.

A connector between the dobby rocker arm and the dobby knife is designed to allow smoother motion of the dobby knife so that the jack hooks are more efficiently maintained on the knife. The connector is positive acting and does not require periodic lubrication.

JED TTD: 8-48

Loom bobbin receiver. Spent bobbin receiver and and support therefor. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 430 149, Nov. 4, 1947.

A receiver for the depleted bobbins on a loom is held by a support so constructed as to permit easy removal of the receiver.

JHB TTD: 8-48

Picker. Drop box picker. Henry M. Bacon (to Dayton Rubber Co.). USP 2 437 342, Mar. 9, 1948.

A drop box picker is made with the rod hole and shuttle head having bearings of material highly resistant to impact, whereas the shuttlehead itself is made of relatively soft material to reduce wear of the picker stick.

TTD: 8-48

Picker spindles. Picker spindle lubricator. Robt. S. Schedin (to Crompton & Knowles Loom Works). USP 2 432 812, Dec. 16, 1947.

Motion of the loom actuates a reservoir and lubricator wire to provide lubrication for the picker spindle.
JHB TTD: 8-48

Reed holder. Handrail and reed holder. Albert A. Gordon III (to Crompton & Knowles Loom Works). USP 2 439 688, Apr. 13, 1948.

The handrail and reed holder are made from a light metal such as magnesium or aluminum to eliminate the vibration usually found in handrails made of wood or a combination of wood and steel.
JAW TTD: 8-48

Shuttle propulsion. Picking mechanism of looms for weaving. Thos. Hindle. USP 2 431 642, Nov. 25, 1947.

Hydraulic means are used for propelling the shuttle across the loom and for progressively retarding and bringing to rest the picker mechanism with a minimum of shock. A cam operated pick timing valve controls the operation of a double acting piston to actuate each picking stick.
JHB TTD: 8-48

Temple roll. Loom temple roll. Emerson B. Tifft (to Draper Corp.). USP 2 434 820, Jan. 20, 1948.

A temple roll is provided which has a rigid cone covered with resilient material to afford as large a wearing surface as possible. TTD: 8-48

Control devices IV 2 b

Electric stop motion. Electric warp stop motion for looms. Victor F. Sepavich & John C. Manoog (to Crompton & Knowles Loom Works). USP 2 436 021 & USP 2 436 023, Feb. 17, 1948.

An electric warp stop motion for looms is described which utilizes an electronic circuit which is controlled by the drop wires and which will be operated by a very small current, incapable of causing the drop wires to heat or to burn.
TWH TTD: 8-48

Electronic weft detector. Electronic weft detector for looms. Victor F. Sepavich & John C. Manoog (to Crompton & Knowles Loom Works). USP 2 431 429, Nov. 25, 1947.

An electric detecting circuit, utilizing an electronic tube which is under control of the weft detector, requires a minimum voltage to eliminate arcing and the danger of shock.
JHB TTD: 8-48

Electric weft detector. Electric weft detecting system for looms. Richard G. Turner (to Crompton &

Knowles Loom Works). USP 2 433 174, Dec. 23, 1947.

An electric weft detecting system is constructed so that it can mount unit detectors in several different positions in order to operate with shuttles of different lengths. A plug-like detector unit is provided which can be readily replaced manually without disturbing any part of the detecting circuit or the supporting base.
TTD: 8-48

Filling bobbin control. Bobbin control for weft replenishing mechanism. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 439 704, Apr. 13, 1948.

Filling bobbins are transferred from magazines in weft replenishing looms so as to eliminate bobbin breakage and prevent transfer of a bobbin adjacent to the bobbin in transfer position. The bobbin next above transfer bobbin is held out of the path of the descending transferrer. The magazine is constructed with a stop for the tip of the second bobbin and a recess for the butt.
JAW TTD: 8-48

Loom stop motion. Stop motion for pile wire looms. Sydney S. Wilson (to Goodall-Sanford, Inc.). USP 2 439 031, Apr. 6, 1948.

A mechanism is described to stop pile wire looms when a pile wire fails to function properly or upon failure of the filling or the warp yarn.
JAW TTD: 8-48

Narrow fabrics. Device for winding up webbing from looms. Andrew J. Luchansky. USP 2 431 130, Nov. 18, 1947.

In a narrow fabric loom where a number of fabrics are woven simultaneously, the shaft upon which the woven web is wound is composed of a series of short-shaft sections which have separable driving connections between adjacent ends in order to permit the removal of the fabric in a single section.
JHB TTD: 8-48

Photoelectric weft detector. Photoelectric weft detector for looms. Oscar V. Payne (to Crompton & Knowles Loom Works). USP 2 431 340, Nov. 25, 1947.

A beam of light reflected through a transparent bobbin energizes a photoelectric cell to indicate the depletion of the bobbin. TTD: 8-48

Photoelectric weft detector. Photoelectric weft detector for looms. Oscar V. Payne (to Crompton & Knowles Loom Works). USP 2 432 793, Dec. 16, 1947.

A source of light is directed into a shuttle when the

shuttle is completely boxed and reflectors direct a beam of light outwardly through a transparent bobbin to actuate a photoelectric cell when the weft on the bobbin is exhausted.
JHB TTD: 8-48

Tension control. Electric contactor for loom warps. Clarence R. Kronoff & Geo. N. Peterson (to Crompton & Knowles Loom Works). USP 2 440 958, May 4, 1948.

A mechanism which will respond to a slight change in warp tension on looms, operates a pair of electrical contacts which control a motor for adjusting the warp beam to hold the tension within pre-determined limits.
TWH TTD: 8-48

Thread remover. Pneumatic thread remover for looms. Leslie J. Hooper & Geo. N. Peterson (to Crompton & Knowles Loom Works). USP 2 432 157, Dec. 9, 1947.

A pneumatic thread remover is equipped with a spindle around which the remaining weft end is wound by a rotating air stream to prevent the retrograde movement of the thread after it has entered the chamber.
JHB TTD: 8-48

Weft detector. Electric weft detector. Raymond F. Dion (to Crompton & Knowles Loom Works). USP 2 433 102, Dec. 23, 1947.

An electric weft detector has a detector circuit permanently connected to spring holders which support detector units. These units may be removed or replaced without disturbing the connections between the units and the circuit. TTD: 8-48

Weft detector. Weft detecting system for looms. Oscar V. Payne (to Crompton & Knowles Loom Works). USP 2 432 171, Dec. 9, 1947.

A transparent bobbin permits light to be deflected through it upon depletion of the yarn to energize a photoelectric cell and to actuate the bobbin replacing mechanism.
JHB TTD: 8-48

Weft detector. Electric weft detector for looms. Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 430 829, Nov. 11, 1947.

The engaging tips of the weft detector or feeler, used for determining when the weft in a shuttle is exhausted, are made from electrically conducting soft rubber, to eliminate cutting or abrasion of the weft.
JHB TTD: 8-48

Weft detector control. Control for electric weft detectors. Alexander C. Krukonis (to Crompton &

Knowles Loom Works). USP 2 433 128, Dec. 23, 1947.

Mechanism is provided to move the electrical weft detector fingers to a position of safety whenever a weft replenishing operation occurs. TTD: 8-48

Jacquard apparatus. Jacquard apparatus, particularly for bobbin machines. Wilhelm Reising. Ger. P. 721 190, May 29, 1942. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Fabric construction IV 2 c

Basket weaves. Basket effects in viscose cloth. Anon. *Am. Wool Cotton Reptr. 62,* No. 27, 9-10, 12 (July 1, 1948).

The characteristics of various yarns and the use of simple weaves can produce a relatively wide variety of texture effects. A basket weave fabric is analyzed. The weave is so arranged that a small check effect is produced, with both warp and filling yarns tending to slip together. TTD: 8-48

Crash fabrics. Rayon crash interesting fabric. Anon. *Am. Wool Cotton Reptr. 62,* No. 23, 13-14, 56 (June 3, 1948).

Rayon-cotton and all-rayon crash fabrics are constructed from yarns whose base compositions are relatively regular, but in which there are bunches larger in size or diameter than the ground yarn. The spacing and size of these bunches, the size of the ground yarns, and the number of ends and picks contribute to a novelty effect without the use of a fancy weave. Construction details of various crash fabrics are given. TTD: 8-48

FABRIC STRUCTURE. John H. Strong. Chemical Publishing Co., Brooklyn; 1947; 241 pp.; price: $6.00.

Reviewed in *Modern Plastics 25,* No. 4, 192 (Dec. 1947). TTD: 8-48

Knitting IV 3

Knit goods. Development council for hosiery and knitwear industry. Anon. *Board of Trade J. 154,* No. 2685, 1090 (June 5, 1948).

Plans for a development council for the hosiery and knitwear industry were drafted by the Board of Trade. It will include the business of knitting fabric, apparel, or other goods, and auxiliary activities carried on by persons who knit. The function of the council will be to assist and advise firms in the industry. TTD: 8-48

Knitting nylon hosiery. Nylon hosiery knitting process. Anon. *Am. Wool Cotton Reptr. 62,* No. 23, 19, 23, 25 (June 3, 1948).

Sizing, yarn organization, knitting procedure, preboarding, and steaming in the production of nylon hosiery are discussed. TTD: 8-48

Tricot fabrics. Tricot knit fabrics. Anon. *Am. Wool Cotton Reptr. 62,* No. 25, 9-10, 47-9 (June 17, 1948).

The production of tricot knit fabrics is discussed, with details of the more effective methods of throwing, warping, knitting, setting, finishing, and testing.

TTD: 8-48

Knitting machine. Flat knitting machine. Harry Weinstein. USP 2 440 496, Apr. 27, 1948.

A drop lock is designed for flat knitting machines which makes possible a greater variety in the disposition of different stitches and can be readily incorporated in the structure of conventional machines without material alteration.

JED TTD: 8-48

Knitting needle. Knitting machine needle and jack. Arthur Currier (to Acme Knitting Machine & Needle Co.). USP 2 431 635, Nov. 25, 1947.

Knitting machine needles are provided with lugs which fit into complementary recesses in the jack to provide a simple yet rigid assembly.

JHB TTD: 8-48

Knitting needle. Knitting needle. Robt. F. Howe (to E. B. Kingman Co.). USP 2 439 622, Apr. 13, 1948.

A hand knitting needle is designed to prevent stitches from slipping off the end of needle, when the knitting is laid down temporarily, by means of a hole through the needle near the pointed end. When the needle is not in use, a rigid pin, made of the same material as the needle, is inserted in the hole to prevent yarn from slipping off needle.

JAW TTD: 8-48

Circular knitting. Auxiliary mechanism for circular knitting machines with a rotating cylinder. Hofmann. Uhlig (Richard) Strumpffabriken. Ger. P. 721 188, May 28, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 5, 1947).

Drawing included. TTD: 8-48

Cutting thread. Thread clamping and cutting attachment for flat frame knitting machines. Max Weisser. Ger. P. 718 815, Mar. 21, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Hand knitting. Straight hand knitting machine with a mechanism for transferring loops. Heinrich. Seyfert & Donner. Ger. P. 726 664, Oct. 17, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Handling welts. Mechanism for drawing-off welts on flat frame knitting machines. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 716 320, Jan. 16, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Method of starting a welt on flat frame knitting machines and the mechanism of carrying out this process, especially for stockings. Nebel, Hilscher (G.) Firma. Ger. P. 716 794, Jan. 29, 1942. 9 pp. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Flat frame knitting machine with a mechanism for loosening certain loops of a loop series. Max Nebel. Ger. P. 722 328, July 8, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Flat knitting machine and a method of manufacturing gloves. Oertel. Seyfert & Donner. Ger. P. 723 847, Aug. 18, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting needle. Needle which may be used as a knitting, frame knitting, hanging-over, or auxiliary needle. Max Nebel. Ger. P. 728 037, Nov. 18, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Supplement to patent 724 145. Drawing included. TTD: 8-48

Knitting pile fabric. Flat frame knitting machine with a mechanism for varying the frame depth and the method for manufacturing frame-knitted piled fabric by means of this device. Kögel & Dietz. Wieland (A. Robert) Firma. Ger. P. 721 258, May 30, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 463 (May 2, 1947).

Drawing included. TTD: 8-48

Making stockings. Method of attaching heel parts on stockings consisting of leg and foot sections by means of the flat frame knitting machine. Dietz. Wieland (A. Robert) Firma. Ger. P. 729 201,

Dec. 11, 1942. *Bibl. Sci. Ind. Reports 5,* 463 (May 2, 1947).

Drawing included. TTD: 8-48

Shaped stocking. Shaped stocking and the method of manufacturing them, using the flat frame knitting machine. Thierfelder & Dietz. Wieland (A. Robert) Firma. Ger. P. 722 996, July 25, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 463 (May 2, 1947). TTD: 8-48

Yarn guide. Yarn guide for knitting or frame knitting machines. Seyfert & Donner. Ger. P. 723 362, Aug. 3, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machines — IV 3 a

Knitting machine. Knitting machine and method of knitting. Oscar Fregeolle (to Hemphill Co.). USP 2 440 333, Apr. 27, 1948.

A circular independent needle machine having co-axial superimposed needle cylinders with mechanism for transferring needles from one cylinder to the other, uses the sliders to control the knitting motion of the needles. The needles are transferred by jacks positioned below and above sliders in the upper and lower cylinders.

JAW TTD: 8-48

Knitting machine. Knitting stockings. Knitting machine. Frederick M. Shea (to Bear Brand Hosiery Co.). USP 2 436 904, Mar. 2, 1948.

The cost of making socks with a cushion sole is reduced by substituting mechanical methods instead of hand methods and using a series of auxiliary sinkers each of which is mounted in the same slot with one of the usual sinkers and capable of relative movement with respect to the usual sinkers. The auxiliary sinkers are provided with high yarn drawing shoulders or arms over which the terry loops are drawn.

JAW TTD: 8-48

Knitting-pick. Pick. Eugene St. Pierre (to Hemphill Co.). USP 2 439 759, Apr. 13, 1948.

A pick is designed for widening or narrowing fabrics knitted on circular independent needle-type knitting machines. The pick contains a recess for receiving needle butts and an adjustable abutment which can be controlled to exclude certain butts and to limit the number of butts which may be received in the recess at one time.

JED TTD: 8-48

Knitted sutures. Knitting machine and method of knitting. Robt. H. Lawson (to Scott & Williams, Inc.). USP 2 440 280, Apr. 27, 1948.

Sutures such as seamless heel and toe sutures are knitted from independent needle, circular hosiery knitting machines by feeding a plurality of yarns, each at a separate feeding station and in such a manner that, during reciprocation of the needle cylinder, 2 or more courses are knitted instead of the 1 course which is the customary practice.

JAW TTD: 8-48

Pattern knitting. Pattern mechanism for knitting machines. Paul W. Bristow (to Scott & Williams, Inc.). USP 2 436 468, Feb. 24, 1948.

A means is provided to drive the drum and pattern chain of a knitting machine in such a manner as to prevent them from getting out of time and causing a smash.

JAW TTD: 8-48

Stop motion. Stop motion system for knitting machines. Edward Vossen (to Stop-Motion Devices Corp.). USP 2 432 953, Dec. 16, 1947.

A signal system is devised to assist the operator of knitting machines to locate the stop motion switch which caused the machine to stop.

JHB TTD: 8-48

Tension control. Warp knitting machine. Richard F. Eshleman (to Am. Viscose Corp.). USP 2 441 189, May 11, 1948.

The tension of yarn coming off the beams and going to the needles in a warp knitting machine is controlled by means of a gear drive which turns the beam continuously at the same constant peripheral speed. The mechanism overcomes the time lag between letting-off and knitting and thus reduces extreme tension on the yarn.

JAW TTD: 8-48

Yarn carriers. Yarn carrier for knitting machines. Albert Friedmann (to Karl Lieberknecht, Inc.). USP 2 432 304, Dec. 9, 1947.

An improved yarn carrier, particularly adaptable to straight knitting machines of the "cotton" type, is capable of controlling and guiding the yarn with imposition of minimum strain or friction.

JHB TTD: 8-48

Handling welts. Flat frame knitting machine with a mechanism for the automatic hanging-over of the welt. Schubert & Salzer Maschinenfabrik A. G. Ger. P. 728 890, Dec. 12, 1942. 8 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Method and flat knitting machine for manufacturing the connection between the pocket and the bordering heel parts of a pocket heel

by means of overlapping. Eisenhardt, Gebr. Rhode. Ger. P. 721 563, June 9, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Flat frame knitting machine with a mechanism for automatically producing welts. Karl Lieberknecht. Ger. P. 723 360, Aug. 4, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Flat frame knitting machine with an automatic mechanism for picking up and hanging over the starting series of a welt. Karl Lieberknecht. Ger. P. 726 988, Oct. 23, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Mechanism for the automatic hanging-over of the welt on flat frame knitting machines. Karl Lieberknecht. Ger. P. 727 836, Nov. 13, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Method of manufacturing a stocking on a flat frame knitting machine in which the heel parts simultaneously connecting the inner heel top with the beginning sole series are subsequently applied. Paul Lieberknecht. Ger. P. 712 056, Oct. 10, 1941. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Flat frame knitting machine. Paul Lieberknecht. Ger. P. 720 652, May 12, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Supplement to patent 644 093. Drawing included. TTD: 8-48

Knitting machine. Flat frame knitting machine for manufacturing piled fabrics. Max Nebel. Ger. P. 722 423, Oct. 15, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Flat frame knitting machine. Otto Richter. Ger. P. 726 265, Oct. 9, 1942. 3 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Knitting machine. Knitting machine where each needle carries out a complete knitting cycle before

the next needle starts on the next knitting cycle, and the needle for this mechanism. Inventions Textiles S. A. Ger. P. 726 597, Oct. 16, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Control devices IV 3 b

Braider stop motion. Mechanical tension and stop motion. Harry R. Yates. USP 2 432 960, Dec. 16, 1947.

An adjustable tension and stop motion device for braiding machines which use strands of rubber and yarn, holds the rubber strand or yarn at the desired even tension by means of a lever which is held in a raised position when the yarn is taut, and which drops when the yarn breaks. The lever releases a raised weight arm which disconnects the braider clutch and stops the machine.

JHB TTD: 8-48

Cutting knitted fabric. Flat single bed knitting machine. Gustav Huber (to Kangol Wear, Ltd.). USP 2 439 300, Apr. 6, 1948.

Knitted articles are cut to a pre-determined length automatically, more accurately and at less cost, by means of a knife supported on a carrier which is arranged to reciprocate across the material below the front edge of the bed at the appropriate time in the knitting cycle, and to cause the knife to cut the fabric along rows of knitted separating yarn.

JAW TTD: 8-48

Knitting control. Pattern control means for knitting machines. Tom R. Ryan. USP 2 439 990, Apr. 20, 1948.

Mechanism is provided for the knitting of different sizes of stockings without making basic changes on full-fashioned hosiery machines, particularly of the "Reading" single unit type.

JAW TTD: 8-48

Knitting machine feed. Yarn feeding mechanism. Norman D. Sawyer (to The Malden Spinning & Dyeing Co.). USP 2 432 685, Dec. 16, 1947.

A yarn feeding mechanism automatically varies the rate of feed of the yarn in accordance with the demand by the knitting machine. The variations in tension in the yarn being supplied to the knitting machine rock an eccentric mounting, thereby causing the furnishing wheels to deliver more or less yarn.

JHB TTD: 8-48

Speed indicator. Speed indicator for warp knitting machines. Richard F. Eshleman (to Am. Viscose Corp.). USP 2 432 518, Dec. 16, 1947.

A rotatable member, driven by at least one of the yarns as it travels on the way to the knitting position, is matched with a similar rotatable member being driven at a pre-determined speed, thereby indicating any speed discrepancy in warp travel.

JHB TTD: 8-48

Stop motion. Slide controlled stop motion. Edward Vossen (to Stop-Motion Devices Corp.). USP 2 439 591, Apr. 13, 1948.

An improvement on the Zieve stop motion device (USP 2 064 869) machines is described. Very fine yarns, from 60 denier down to 15 denier, can be handled by the mechanism in which the number of moving parts has been reduced to produce a very sensitive control which is not affected by the vibration or the superficial pulling of the yarn in process.

JAW TTD: 8-48

Stop motion for tricot machines. Stop means for textile apparatus. Carlos A. Hepp & Peter Schoenster (to Alfred Hofmann & Co.). USP 2 438 365, Mar. 23, 1948.

A stop motion especially adaptable to tricot warp knitting and other machines having a great many yarns arranged to move in unison is designed to stop the equipment upon the failure of one or more yarns or threads. Compressed air is used to remove the broken yarn from its normal unbroken position and a light source with a photoelectric cell is used to detect its absence and stop the machine.

TWH TTD: 8-48

Yarn guide. Yarn laying guide of flat single bed knitting machine. Gustav Huber (to Kangol Wear Ltd.). USP 2 432 477, Dec. 9, 1947.

The mechanism eliminates the use of a separate sliding carrier for the yarn laying guide of flat single bed knitting machines.

JHB TTD: 8-48

Chain knitting. Chain knitting machine with mechanism for maintaining the width of the fabric. Georg Saupe. Ger. P. 721 627, June 11, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Feed mechanism. Feed mechanism especially for intermittently fed flat knitting machines. Wilhelm Reinert. Ger. P. 718 816, Mar. 21, 1942. 14 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Machine drive. Chain drive mechanism for yarn guide bars of flat frame knitting machines. Loi-

mann, Hilscher (G.) Firma. Ger. P. 721 562, June 9, 1942. 6 pp. *Bibl. Sci. Ind. Reports 5,* 460 (May 2, 1947).

Drawing included. TTD: 8-48

Machine drive. Brakeless drive for pleating thread-guide bars of flat frame knitting machines. Max Müller. Ger. P. 723 359, Aug. 3, 1942. 5 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Producing welts. Flat frame knitting machine with a mechanism for producing welts. Richard Parthum. Ger. P. 723 361, Aug. 7, 1942. 8 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947).

Drawing included. TTD: 8-48

Fabric construction IV 3 c

Ambidextrous glove. Seamless knit ambidextrous glove and method of making the same. Albert C. Ackerman. USP 2 441 611, May 18, 1948.

The method is described to make a glove, which is seamless, smooth fitting, comfortable, and capable of fitting either hand. The body of the glove may be knit upon an ordinary circular knitting machine without expensive modifications of the machine. TTD: 8-48

Knit terry fabric. Circular knit hosiery. Edgar W. Clarke (to Interwoven Stocking Co.). USP 2 435 770, Feb. 10, 1948.

Circular knit hosiery is produced which has the advantageous characteristics of terry fabric and the desirable appearance and extensibility provided by Links-Links patterning. TTD: 8-48

Knitted fabrics. Number knitting. Virginia W. Bellamy. USP 2 435 068, Jan. 27, 1948.

A method of knitting is described in which an article is formed progressively in numbered units, each of which, after the first, is picked up in the knitting from a previously knitted unit with a completed edge. Each unit has a boundary of straight lines and is one of a plurality of fundamental shapes.

JAW TTD: 8-48

Knitted stocking. Circular knitted stocking. Arthur L. Hunt (to Geo. Edwards & Sons). USP 2 437 195, Mar. 2, 1948.

The method of knitting causes the toe of a circular knit stocking to conform to the foot of the wearer.

TTD: 8-48

Knitting. Knitted fabric. Clarence W. Minton (to Hold Stitch Fabric Machine Co.). USP 2 431 068, Nov. 18, 1947.

Wale lines in certain areas are knitted of a shorter length than the adjacent wales in the same area to produce a puckered or bulging effect in the fabric.
JHB TTD: 8-48

Non-run knitting. Knitted fabric and method. Vincent Lombardi (to Lombardi Knitting Machine Co., Inc.). USP 2 434 045, Jan. 6, 1948.

A knitted fabric is described which has firmness and yieldability not possessed at present by either knitted or woven fabrics, non-run and non-ravel tendencies, well secured and relatively inelastic lace work, and good design qualities. The fabric comprises a series of extents of yarn united by means of a knot wherein, one extent of yarn passes through the light of a loop thereof to form a double eyelet through which another extent of yarn passes. TTD: 8-48

Plaiting. Binding method for the longitudinal and transverse edge of a plaited or woven runner made of rubber. Max Unger. Ger. P. 707 766, July 3, 1941. 3 pp. *Bibl. Sci. Ind. Reports 5,* 462 (May 2, 1947).

Drawing included. TTD: 8-48

Special fabrics IV 4

Elastic fabric. New fabric for laminating. R. L. Van Boskirk. *Modern Plastics 25,* No. 9, 196 (May, 1948).

"Strex", recently produced by U. S. Rubber Co., is an elastic woven cotton fabric containing no rubber or elastic material. The elasticity is obtained by coiling the individual cotton strands before weaving, the coils resembling tiny wire tension springs. The stretch of the woven fabric can be regulated from 25 to 100%, and it can be stretched in one direction while remaining stable in the other. TTD: 8-48

Self-sealing container. Self-sealing container. Leone McLaughlin (to Wingfoot Corp.). USP 2 439 366, Apr. 6, 1948.

Self-sealing containers are described in which the sealing material is supported by weftless or broken weft-cord fabrics.
VBS TTD: 8-48

Tufting machine. Tufting machine. Artis E. Charles (to Carolyn Chenilles, Inc.). USP 2 432 469, Dec. 9, 1947.

An auxiliary drive for the feed shaft of a multiple needle tufting machine permits a momentary increase in the rate of the fabric web feed and in this manner spaces the tufts being formed at predetermined distances along the fabric web.
JHB TTD: 8-48

Looped fabric. Method of manufacturing looped fabric with tuck patterning. Max Nebel. Ger. P. 718 092, Mar. 2, 1942. 4 pp. *Bibl. Sci. Ind. Reports 5,* 461 (May 2, 1947). TTD: 8-48

Fabric processing IV 5

Water. Water quality essential to textile processes. V. J. Calise. *Textile World 98,* No. 7, 101-03, July, 1948.

Because the water requirements for processing fabrics run as high as 30 gal. per lb., adequate purity of the water used is essential. Hardness of water is the most prevalent fault found in common types of water. This raises the soap consumption in the industry, precipitates deposits upon the fabrics, affects the uniformity of mercerizing or dyeing of any fabric. The presence of iron and manganese causes the formation of oxycellulose in cotton bleaching and off-shading of dyeing in any fabric. Excess alkalinity will also cause uneven dyeing. Presence of micro-organisms during spring thaws or fall rainy seasons likewise has a harmful effect on dye level.
LCL TTD: 8-48

Closing bags. Filled bag sewing machine. Park A. Herr (to The Singer Mfg. Co.). USP 2 434 158, Jan. 6, 1948.

Mechanism is provided for application to a conventional 2-thread chain stitch sewing machine to adapt the machine to close filled bags with a through-and-through stitching of the bag walls with a rip cord or the same type of closure without a rip cord. TTD: 8-48

Cloth drying. Apparatus for drying cloth with air. Harold J. Walter & Paul R. Rose (to Uxbridge Worsted Co., Inc.). USP 2 440 648, Apr. 27, 1948.

A 2-stage drying operation is described which utilizes hot air or gas. During the first drying stage, the cloth is exposed to a temperature which would be destructive during the second drying stage. This invention provides economical means for pre-drying cloth whereby the finishing of the cloth may be facilitated, and includes an improved method for drying cloth uniformly, both within the body of the cloth and on its surfaces.
CAC TTD: 8-48

Dust remover. Suction device for removing dust from fabric or the like. Alfred J. Zugehoer. USP 2 437 340, Mar. 9, 1948.

A receptacle is provided for holding articles which are to be subjected to a suction device for the removal of dust and dirt. TTD: 8-48

Fabric drying. Apparatus for drying and cooling fabrics. Harold Hibbert (½ to Jos. Hibbert & Co., Ltd.). USP 2 441 357, May 11, 1948.

A method of cooling the dried and heated fabric issuing from the drying chamber of a hot-air drier, and preheating the fresh air drawn by a fan from the outside atmosphere into the drying chamber is described. The fan is adapted to draw its supply of fresh air from the outside atmosphere over the surface of or through the dried and heated fabric. The quantity of such air drawn by the fan is regulated by means of a valve or damper controlled by a thermostat and hygrostat, according to the conditions in the drying chamber.

CAC TTD: 8-48

Fluid treatment. Apparatus for fluid treating lengthy material. Justin H. Ramsey. USP 2 438 374, Mar. 23, 1948.

Lengths of flexible material having different diameters individually are passed through an elongated passage to receive a fluid for treatment by providing the passage with a means to hold therein seals having apertures of different diameters to accommodate the diameter of the particular lengths being treated. The seal prevents or limits the escape of the fluid from the passage in the direction of travel of the material in process. An instance of such fluid treatment is the vulcanizing of lengths of material, each comprising a core and with a plastic coating.

RJB TTD: 8-48

Laminated fibrous material. Method of laminating. Robt. W. Auxier & Patrick Norelli (to Westinghouse Electric Corp.). USP 2 439 918, Apr. 20, 1948.

Laminated sheets of fibrous material having a resinous binder are bonded together by passing between flexible, endless belts which apply heat and pressure to the composite mass. The endless belts are so spaced that a desired pressure may be applied. Each belt has platens, which are part of a high frequency dielectric heating unit, regularly attached to its surface. The electrical field developed between the platens of the 2 belts heats and bonds the laminated sheets uniformly.

RJB TTD: 8-48

Sewing machine device. Sewing machine safety device. Alfred R. Wood (The Singer Mfg. Co.). USP 2 440 227, Apr. 20, 1948.

A device is provided to prevent premature raising of the work-clamp on cyclically operable sewing machines and comprises an interlocking mechanism which prevents the starting of the machine until the work-clamp

and thread cutter have been released and have assumed their normal positions.

JED TTD: 8-48

Stitching rope. Rope whipping sewing machine. Philip T. McLendon (to Union Special Machine Co.). USP 2 435 457, Feb. 3, 1948.

A method and machine are provided to stitch the end of a rope so that it will be protected against untwisting or ravelling. TTD: 8-48

Tenter clip. Tenter machine clip. John C. Nash. USP 2 437 967, Mar. 16, 1948.

The excessive power consumption and wear of parts of tenter machines are overcome by the use of a clip provided with rollers on both the bottom and inner sides. The rollers support the weight of the clip and the cloth in process.

VBS TTD: 8-48

Fabric applications IV 6

Decorative fabrics. Manufacture of decorative fabric articles having a design in relief. Frederick H. Untiedt. USP 2 434 527, Jan. 13, 1948.

The manufacture of decorative fabric articles having a design in relief is achieved in the cold by the use of unvulcanized latex foam rubber. Rubber latex is foamed by agitation and blended with gelling agents. The foam is poured into molds which contain the fabric to be bonded to the rubber. The desired design is then impressed in the gelled latex foam. The foam collapses where pressure is applied and stays in its collapsed condition. Vulcanization sets the foam in the impressed design and bonds it to the fabric.

LCL TTD: 8-48

Electric blanket. Electrically heated two-ply blanket. Ivar O. Moberg. USP 2 432 785, Dec. 16, 1947.

A blanket is woven with two plies separated throughout the greater part of the structure but stitched together during weaving at intervals, both warpwise and filling wise, to provide passages between the plies for the flow of air and the threading of conductors in directions at right angles to each other.

JHB TTD: 8-48

Electrically heated blanket. Heating blanket or the like and method of fabricating same. Alfred J. Huck (to Knapp-Monarch Co.). USP 2 439 892, Apr. 20, 1948.

The carrier backing of the heater element of a heating pad or blanket is folded in such a manner that the introduction of the wiring is facilitated. After being wired, the backing is unfolded and covered with the

blanket material. Blankets are produced at low cost and with positive spacing of heating elements to prevent short circuits.
AFR TTD: 8-48

Fabric inspection. Fault detector. Philippe E. H. Eichinger (to Gen. Cable Corp.). USP 2 433 444, Dec. 30, 1947.

A device is described for detecting flaws or irregularities in the fabric covering of insulated wires or cables. Upon detecting a flaw in the knitted or braided fabric, electric contacts are closed and mechanism actuated to stop the machine and to signal the operator.
TWH TTD: 8-48

Fabric use. Self-sealing fuel tank. Paul J. Dasher (to the B. F. Goodrich Co.). USP 2 438 965, Apr. 6, 1948.

A fuel tank lining composed of a series of thin sealing layers alternating with thin non-sealing laminations which have a high elasticity and a high tensile strength produces a combination of self-adherent power with tensile strength sufficient to hold the edges of the sealing member together. The sealing layers are made from adhesive material such as vulcanized latex sheet, or the unvulcanized copolymers of butadiene or isoprene with methyl acrylate, methyl methacrylate, or styrene. The non-sealing laminations may be made by vulcanizing soft rubber. The covers of these laminations may be tire fabric coated with a vulcanized rubber composition. TTD: 8-48

Rug construction. Separable rug construction. Milton Newman. USP 2 432 485, Dec. 9, 1947

Individually complete floor rug units have a series of loops spaced along the marginal edge. These loops, interfitted with those of similar units, are laced together by a detachable cord to form a rug of any desired size.
JHB TTD: 8-48

CHEMICAL RAW MATERIALS V

Fire-resistant esters. Fire-resistant cellulose esters and ethers. Jos. H. Klaber & Johan Bjorksten (to Quaker Chemical Products Corp.). USP 2 440 201, Apr. 20, 1948.

The incorporation of ammonium thiocyanate (or amine thiocyanates) to cellulose esters or ethers is claimed to impart fire-resistance to the products. These additives are compatible with the cellulose derivatives. It is claimed that one percent of ammonium thiocyanate added to cellulose acetate will retard combustion; with this percent added, the product burns only partly and

the flames are extinguished spontaneously; and, when 5% is added, the composition is entirely non-burning.
GNR TTD: 8-48

CHEMISTRY AND TECHNOLOGY OF WAXES. Albert H. Worth. Reinhold Publishing Corp., New York, 1947; 527 pp.; price $10.00.

Reviewed in *Textile Research J. 18,* 374-5 (June, 1948). TTD: 8-48

COATING AND INK RESINS, TECHNOLOGICAL STUDY. Wm. Krumbhaar. Reinhold Publishing Corp., New York, 1947; 323 pp.; price $7.00.

Reviewed in *Textile Research J. 17,* 717-18 (Dec. 1947). TTD: 8-48

KUNSTHARZE (SYNTHETIC RESINS). H. Wagner & H. F. Sarx. Verlag Carl Hanser, München, 1946; 197 pp.; price 12.-RM.; *in German.*

Reviewed in *Textile Research J. 18,* 246 (Apr. 1948). TTD: 8-48

Plastics and elastomers V 1

Plastics. Advances in plastics during 1947. Anon. *Modern Plastics 25,* No. 5, 115-20, 186-93 (Jan. 1948).

A review; 418 references. TTD: 8-48

Plastics. Major advances in plastics during 1947. Jas. W. Underwood. *Mech. Eng. 70,* No. 4, 298-300, 312 (Apr. 1948).

A review. 72 references. TTD: 8-48

Adhesive tape. Pressure-sensitive adhesive sheet material. John B. Martin (to The Kendall Co.). USP 2 439 481, Apr. 13, 1948.

An adhesive tape is described one side of the backing material of which is coated with a normally tacky pressure-sensitive polybutene adhesive and the other side of the backing material is coated with a thin dry film of a substance selected from the group consisting of water-insoluble metallic salts and amides of a saturated fatty acid selected from the group consisting of stearic and palmitic acids. The adhesion between the adhesive and the back surface of the tape is of such low magnitude that satisfactory unrolling characteristics can be secured. TTD: 8-48

Heat sealing tool. Electrically heated tool for uniting sheet material. Frederick G. Dodge (to Celanese Corp. of Am.). USP 2 430 920, Nov. 18, 1947.

A device for uniting fabrics, at least one of which contains a thermoplastic material, is described. A roller permits the application of heat at spaced points along

the surface of the sheet with which the device is in immediate contact as the roller is moved along the surface.

JHB TTD: 8-48

Puckered film. Reticulately puckered laminated plastic sheet. Nathan J. Brown, USP 2 440 039, Apr. 20, 1948.

An ornamental, flexible sheet or film is made by means of laminating a vinyl resin to a sheet of cellulosic material, which may be cast from a cellulose acetate or cellulose butyrate dope. After casting and dyeing, the vinyl resin dope is applied to one face of the cellulose sheet. The solvent softens and partially dissolves the cellulose sheet and its plasticizer. The partially solvated cellulose compound and the vinyl resin are incompatible. The result is a reticulate puckering of the combined film.

LCL TTD: 8-48

Regenerated cellulose pellicle. Regenerated cellulosic pellicle. Chas. M. Rosser (to Am. Viscose Corp.). USP 2 436 181, Feb. 17, 1948.

This patent covers a combination plasticizer and fire retardant for pellicles formed of hydrophilic materials such as regenerated cellulose. The material is impregnated with an aqueous solution of guanidine thiocyanate, a compound which is non-volatile and non-discoloring.

VMG TTD: 8-48

HANDBOOK OF THE SOCIETY OF THE PLASTICS INDUSTRY. Society of the Plastics Industry, New York; 451 pp.; price: $7.50.

Reviewed in *Eng. News-Record 140,* No. 10, 96 (Mar. 4, 1948). TTD: 8-48

Plastics. Appareillage et usinage des matières plastiques (Preparation and use of plastics). J. Lescuyer. Dunod, Paris; 1947; 436 pp.

Reviewed in *Bull. Soc. chim. 15,* Nos. 3-4, 497-8 (Mar.-Apr. 1948). TTD: 8-48

PLASTICS DICTIONARY. T. A. Dickinson. Pitman Publishing Corp., New York; 1948; 312 pp.; price: $5.00.

Reviewed in *Mech. Eng. 70,* No. 6, 563 (June, 1948). TTD: 8-48

CHEMICAL PROCESSING VI

Cotton fabric treatment. Introduction of amino groups into cotton fabric by use of 2-aminoethylsulfuric acid. John D. Guthrie, Southern Regional Laboratory. *Textile Research J. 17,* 625-9 (Nov. 1947).

Two methods of introducing amino groups into cotton fabrics are: (1) the use of 2-aminoethylsulfuric acid and (2) the use of 2-chloroethylamine; method (1) is more efficient and less expensive. Fabrics treated in this way dye readily with acid dyes and chrome dyes and have an increased affinity for direct cotton dyes. They may be rotproofed with sodium dichromate or mercuric chloride. TTD: 8-48

Finishes. New Monsanto finishes announced. Anon. *Am. Wool Cotton Reptr. 62,* No. 27, 11-12 (July 1, 1948).

A brief discussion is made of the use of Syton for speeding the spinning of yarns. Resloom is used to produce a new wrinkle-resistant seersucker. The applications of Stymer, Ultrasol and other resins to wool and cotton fabrics are discussed. TTD: 8-48

Finishes. Resins for textiles. Kenneth H. Barnard. *Modern Plastics 25,* No. 4, 104-7 (Dec. 1947).

Control of the shrinkage of wool, retention of crispness in sheer fabrics under conditions of moisture, durability of glazed chintzes when washed, and moisture and stain resistance are typical accomplishments of new resin finishes. Resins most widely used are reaction products of urea and formaldehyde. Thermoplastic resins are also being developed for use in textile finishing. Chemical and resin finishes are compared. TTD: 8-48

Finishing cotton. Finishing in dry state. Anon. *Am. Wool Cotton Reptr. 62,* No. 24, 9-10, 47-8 (June 10, 1948).

Cotton finishing in the dry state is discussed, giving details of the equipment and processes used. A description of spring- and pneumatic beetling and napping machines is also given. TTD: 8-48

Mercerization. Mercerization of cellulose by sodium hydroxide. An interferometric study. Edouard Calvet. *Compt. rend. 226,* No. 19, 1528-30 (May, 1948).

While the absorption of NaOH by mercerized cellulose is irreversible at temperatures as low as 15°, it becomes reversible at about 40°. In the case of unmercerized cellulose, the absorption is reversible from 15 to 40°. TTD: 8-48

Resin finishes. Future for resin finishes in wool textiles. M. Lipson, Council for Sci. and Ind. Research, Australia. *Am. Wool Cotton Reptr. 62,* No. 21, 83, 85 (May 20, 1947).

The research on the application and effect of resin finishes to wool that is being carried on at Leeds University is discussed. TTD: 8-48

Slasher drives. Electrical slasher drives. C. E. Center, Westinghouse Electric Corp. *Am. Wool Cotton Reptr. 62,* No. 27, 13-15, 17 (July 1, 1947).

A review is made of the background and development of slasher drives in their chronological order of development (cont.). TTD: 8-48

Coating composition. Coated fabric. Robert R. Lawrence (to Monsanto Chemical Co.). USP 2 441 542, May 11, 1948.

Fabrics, coated with polyvinyl butyraldehyde acetal resin compositions, are made by covering the fabric with a viscous solution of the organic ingredients in a solvent by means of a knife-type spreader and then evaporating the solvent. The thermosetting agent is a phenol-aniline-aldehyde condensation product. Fabrics made from nylon, glass, or cotton can be effectively coated with the above resin compositions.
CCJ TTD: 8-48

Controlled fabric movement. Apparatus for controlling the movement of fabric through processing chambers. Jas. Cook, Donovan M. McSpadden, & Walter L. Thornburg. USP 2 431 372, Nov. 25, 1947.

Fabrics pass through chambers for bleaching, desizing, or similar treatments in full open width at a uniform rate of speed by means of apparatus which provides adjustably mounted fabric supporting slides for mechanically aiding the downward movement of the fabric through the chamber.
JHB TTD: 8-48

Fabric treatment. Composite structures. Lee R. Herndon (to E. I. du Pont de Nemours & Co.). USP 2 439 514, Apr. 13, 1948.

A method is described for the treatment of certain yarns, filaments, cords, fabrics and the like to enable such fiber substances to be more firmly bonded to rubber by applying to fibrous reinforcing structure containing an active hydrogen, a rubber containing active H, and a cyanate such as polyisocyanates, polyisothiocyanates, and mixed isocyanate-isothiocyanate compounds. The resulting structure is associated with vulcanizable rubber and they subjected to vulcanizing temperatures.
VBS TTD: 8-48

Laundering. Preparation for treating launderable fabric articles. Herman Engler (to Paul Koletzko & C. Alfred Hands). USP 2 439 460, Apr. 13, 1948.

A preparation useful in laundering comprising a vegetable gum, glycerine, and sodium borate, is described. This mixture is applied to launderable fabric articles

which have become worn or dull in appearance for the purposes of imparting a smoothness to the surfaces and to restore part of the natural brightness and luster to the fabrics.
WPU, jr. TTD: 8-48

Surface coating. Flexible sheet material comprising a surface coating containing polyvinyl chlorides. John H. McGill (to Imperial Chemical Industries, Ltd.). USP 2 439 051, Apr. 6, 1948.

In order to reduce the surface stickiness of flexible sheet materials made from a plasticized and gelatinized polyvinyl chloride composition which may be calendared on to a textile fabric base, a lacquer comprising a dispersion of a polyvinyl chloride powder in a solution of a polymer with which polyvinyl chloride is compatible is applied to the surface of the sheet material. Methyl methacrylate is the preferred polymer for this purpose. This lacquer treatment eliminates the surface stickiness and gives an attractive eggshell or dull surface appearance which has high resistance to flexing.
WPU, jr. TTD: 8-48

RUBBER RED BOOK; DIRECTORY OF THE RUBBER INDUSTRY. 6th ed. Rubber Age, New York; 1947; 835 pp.; price $5.00. (Contains classified section on fabrics and textiles.)

Reviewed in *Mech. Eng. 70,* No. 5, 470 (May, 1948). TTD: 8-48

COLOR VII

Batiking. Batik. J. Bergmans. *Textielwezen 3,* No. 9, 91-7, (Sept. 1947).

The batik process was developed in Java and introduced into Europe in 1891. An improved process was invented by Thom. Prikker and Krist Lebeau in 1900. The process was also studied by Roefaer and de Juynboll, J. A. Loeber Jr., J. E. Jaspar and others. Interest in batiking is growing in Europe. TTD: 8-48

Block printing. Block printing. Bernard Wykes (to David Evans & Co., Ltd.). USP 2 432 364, Dec. 9, 1947.

The object of this invention is to do block printing by machine, yet to simulate the artistic results which have previously been obtained only by block printing by hand. Each impression is created by impact of the printing block which falls down a vertical guide from the same height by gravity. The guide and the block are raised while the material is moved to the next printing position. Integral with the block and guide mechanism is apparatus for charging the block with coloring matter.
VMG TTD: 8-48

Bleaching VII 1

Bleaching. Oxycellulose defects can be avoided or cured. Jas. McCartney. *Textile World 98,* No. 7, 116, 214-18, July, 1948.

The principal danger spots of oxycellulose formation are as follows: (1) the use of excessively strong alkaline liquors for kiering, particularly in the presence of metallic surfaces or air (2) bleaching of areas degraded prior to the bleaching operation (3) very strong mercerizing liquors (4) the presence of acid in hypochlorite bleaching (5) the presence of catalytic impurities in hydrogen peroxide bleaching. In addition to tendering effects caused by oxycellulose, this substance also causes unevenness in dyeing. Details of 3 tests are given for determining the presence of oxycellulose and distinguishing this substance from hydrocellulose.
LCL TTD: 8-48

Dyeing VII 2

Dyeing rayon viscose. Staining of viscose rayon cross sections. P. H. Hermans, Inst. for Cellulose Research. *Textile Research J. 18,* 9-17 (Jan. 1948).

Results of experiments show that the skin and core in cross sections of viscose yarn possess different dyeing properties due to the fact that the skin has a denser structure than the core. The manner in which this phenomena affects dyeing, and simple methods for obtaining selective dyeing of the skin are discussed.
TTD: 8-48

Dyeing synthetics. Synthetics, major problem in hosiery dyeing. V. T. Hartquist. *Textile World 98,* No. 7, 127, 201-02, July, 1948.

The 4 application properties of greatest importance to the dyer are salt sensitivity, temperature of maximum affinity, migration rates, and rate of exhaustion. Many dyeing problems in the use of synthetics or synthetic blends are yet unsolved. Complete stabilization of nylon-wool blends are claimed at 65% nylon, 35% wool. Staple synthetic yarns are considerably easier to handle than filaments.
LCL TTD: 8-48

Dyeing wool. Vat color wool dyeing progress. C. T. Hug, E. I. du Pont de Nemours & Co. *Am. Wool Cotton Reptr. 62,* No. 21, 25, 27, 29, 31, 33 (May 20, 1948).

Bright, light-fast and wash-fast colors may be obtained on wool by vat colors. The reduced and pigment methods of vat dyeing wool will give satisfactory results, provided that, with increased caustic soda concentration, the time of contact is short and temperatures are

kept low. Neutralization with sodium bicarbonate and oxidation with sodium perborate have been found to be the best finishing treatment for vat-dyed woolens.
TTD: 8-48

Acetate dyeing. Cellulose acetate fibers, etc. John R. Caldwell (to Eastman Kodak Co.). USP 2 439 074, Apr. 6, 1948.

Addition of 10-20% of a condensation polymer from a dicarboxylic acid and an alkyl-dialkylolamine to a cellulose acetate spinning solution gives cellulose acetate fibers having wool dyeing properties. The fibers are made susceptible to wool dyes containing sulfonic acid groups, whereas cellulose acetate alone is not dyed by such dyes.
WPU, jr. TTD: 8-48

Dyeing. Apparatus for dyeing and treating cloth. Sherman Converse. USP 2 441 992, May 25, 1948.

The mercerized or unmercerized cellulosic fabric to be treated with a vat dye is pigment padded or padded with the vat dye in a leuco form prior to entrance into the steam chamber. The cloth, upon entering the steam chamber, passes up and down over a series of rollers and after a specified time in the steam-aging box leaves through an outlet port. The aging box has a liquid seal comprised of a small volume of the reduced vat dye which is held in a shallow trough on the inlet and outlet ports. This trough is jacketed to enable close temperature control of the reduced dye which serves as a booster to give a more even dyeing of the cloth and prevent excessive bleeding during the initial reduction of the dyed fabric.
CCJ TTD: 8-48

Dyeing. Continuous dyeing of textile materials. Glenn F. Womble (to Dan River Mills, Inc.). USP Re 23 004, May 25, 1948.

A method is described whereby cloth is padded with the unreduced vat dye, dried, reduced in an immersion box with the usual chemicals, nipped, rinsed, oxidized, soaped, rinsed, and dried. The process is continuous and is claimed to produce more even dyeing and better penetration.
CCJ TTD: 8-48

Dyes. Improving the fastness of dyed organic derivative of cellulose textiles by impregnation with cyanamide. Henry Dreyfus (to Celanese Corp. of Am.). USP 2 440 330, Apr. 27, 1948.

The color fastness of dyed cellulosic or derived cellulosic fabrics may be improved by impregnating the fabrics with an aqueous solution of cyanamide, drying the

fabrics, and then heating them to 110°-150°C until a difficultly soluble nitrogenous compound is formed.
GNR TTD: 8-48

Fluorescent dyes. Fluorescent-dyed cellulose acetate fabric. Geo. C. Ward & Victor S. Salvin (to Celanese Corp. of Am.). USP 2 433 939, Jan. 6, 1948.

This patent covers the preparation of fluorescent dyestuffs and their application to materials made either wholly or partially of cellulose acetate or their organic derivatives of cellulose. A method is described for producing the dyestuffs on the textile materials.
VMG TTD: 8-48

THE CHEMISTRY AND PHYSICS OF ORGANIC PIGMENTS. L. S. Pratt. John Wiley & Sons; 1947; 359 pp.; price: $6.00.

Reviewed in *Am. Scientist 36,* No. 1, 176, 178 (Jan. 1948). TTD: 8-48

Printing VII 3

Luminescent pigments. Luminescent pigments are easily applied. Roy Campbell. *Textile World 98,* No. 7, 137, 222, 224 (July, 1948).

Fluorescent pigments are practically applied by roller printing, whereas phosphorescent pigments must necessarily be applied by screen printing because of their larger particle size. Care must be taken in mixing the pigment paste to be sure that no ingredients will react with the pigments. Acids, particularly, must be avoided. After drying, a clear finish coat must be applied to make the surface smooth.
LCL TTD: 8-48

Photogravure process. A new method of printing on cloth. F. Vandemeulebroucke. *Textielwezen 3,* No. 8, 41-2 (Aug. 1947).

The photogravure process is said to have the following advantages: (1) the work is done more quickly, (2) the personnel does not need to be so highly specialized, (3) the cylinders used cost less, (4) designs can be produced which could not be obtained by previous methods, (5) the cost of printing is less. The process is in use in France and England, and a plant is being built in Holland. TTD: 8-48

Printing pastes. The use of vat colors and their derivatives in printing fabrics. Practicus. *Textielwezen 3,* No. 7, 31-2 (July, 1947).

The preparation of the printing paste, its application to the cloth, and the fixation and development of the dye on the fiber are discussed. TTD: 8-48

Printing rayons. Some suggestions for screen printing by urea process. Jos. H. Bingham. *Textile Age 12,* No. 2, 82, 84-7 (Feb. 1948).

Dye selection, thickeners, pastes, penetration styles, and steaming are discussed in relation to screen-printing rayon fabrics by the urea process. TTD: 8-48

Printing nylon. Composition comprising caprolactam for printing nylon fiber. Chas. F. Miller (to E. I. du Pont de Nemours & Co.). USP 2 439 745, Apr. 13, 1948.

A mixture of caprolactam and an acidic salt was found to reduce the time required to age acid- and direct dye prints on nylon. TTD: 8-48

Textile print blanket. Textile print blanket. Wm. C. Ross & Stephen B. Nelley (to Dewey & Almy Chemical Co.). USP 2 436 761, Feb. 24, 1948.

A new blanket is designed for the wash-blanket process of printing textiles in order to minimize flushing, to provide means to prevent color from working under the goods, and to make cleaning of the blanket by washing more effective. The blanket is molded with minute longitudinal channels which may occur 50 to an inch. The channels may be of any cross sectional design, but preferably they are triangular, with a depth of ten thousandths of an inch. The channels are claimed to prevent the color from running back under the goods.
LCL TTD: 8-48

Textile printing. Textile printing apparatus. Stephen B. Stafford (to Rice Barton Corp.). USP Re 22 942, Nov. 25, 1947.

Fabric is fed to a textile printing machine at a uniform rate under uniform tension and at a uniform width.
JHB TTD: 8-48

Zein-containing solutions. Solutions,-zein-containing. Method of preparing zein-containing solutions. Roy E. Coleman (to Time, Inc.). USP 2 433 029, Dec. 23, 1947.

This patent covers improvements in certain solutions, ink vehicles, and coating compositions of the alcohol-soluble corn gluten proteins or other prolamine gluten proteins. It is claimed that these solutions are less viscous than those previously used and that they have but a slight tendency to thicken upon standing for as much as a year.
VMG TTD: 8-48

Measurement and defects VII 4

Cotton degradation. Cellulose behavior with filtered sunlight. P. J. Fynn, J. E. Sands, & K. S. Camp-

bell, Southern Regional Research Laboratory. *Textile Research J. 18,* 350-7 (June, 1948).

Exposure of kier-boiled cotton sheeting in sunlight under controlled and uncontrolled conditions is described. Results indicate that sunlight can account for practically all of the degrading effects on cotton fabrics caused by prolonged weather exposure in the absence of any pronounced microbiological action due to corrosive atmospheric contaminants. A discussion of an investigation of the relative destructiveness of different regions of the sun's spectrum is also given.

TTD: 8-48

Effect of light. Wetting of wool as function of duration of fadeometer exposure. Kermit S. LaFleur, Farnsworth Mill. *Textile Research J. 18,* 39-41 (Jan. 1948).

Experiments on the damage to wool from light exposure show that the sulfur-containing groups of the wool fiber are modified the most and that there is a good correlation between this modification and the increasing wettability of wool. TTD: 8-48

Teintoscope. New apparatus for colorimetric analysis and the measurement of pH. L. Aspeblagh. *Textielwezen 3,* No. 8, 43-4, (Aug. 1947).

A new colorimeter, manufactured in Belgium, is described. TTD: 8-48

PROOFING VIII

Mildew resistance. The resistance of treated felt gasket materials to fungus attack. Sigmund Berk, Frankford Arsenal. *Am. Dyestuff Reptr. 36,* No. 19, 541-43 (Sept. 22, 1947).

Felt is a generic term for a material which may contain all wool or a mixture of wool and other textile fibers. When it is all wool, the mold problem is caused chiefly by additives, such as soaps or vegetable oils. The addition of cotton fibers makes felt more susceptible to mold growth. Two methods of testing mildew resistance are described. Both tests use one of 3 organisms, *Aspergillus niger, Chaetomium globosum* and *Penicillium sp.* Complete protection against mold attack by the 3 organisms was provided by the following fungicides; 0.25% phenyl mercuric oleate, 2% ethyl mercuric pentachlorophenolate, 10% zinc dimethyldithiocarbamate, 4% copper pentachlorophenate, and 1 to 1.5% dihydroxydichlorodiphenyl methane.

EA TTD: 8-48

Textile deterioration. Mildew- and rot-resistance of textiles. P. B. Marsh, USDA. *Textile Research J. 17,* 597-615 (Nov. 1947).

A summary of information relating to mildew- and rot-

resistance of textiles and textile fibers. Causes, effects, and methods of diagnosing and preventing textile deterioration are discussed. The various methods of testing fabrics for behavior toward fungi are also described. TTD: 8-48

Water-repellent compound. Silicones valuable in textile finishing. F. L. Dennett, Dow Corning Corp. *Am. Wool Cotton Reptr. 62,* No. 24, 41, 43 (June 10, 1948).

A durable water-repellent finish may be obtained on a variety of fabrics by the application of a new liquid silicone compound known as DC 1107. The compound may be applied from an aqueous emulsion on conventional equipment. It does not affect the color or strength of the fabric, but does give the fabric a soft full hand. TTD: 8-48

Wool degradation. Structural changes in wool degraded by ringworm fungus *Microsporum Gypseum* and other microorganisms. G. R. Mandels, W. H. Stahl & H. S. Levinson, Quartermaster Research & Development Laboratories. *Textile Research J. 18,* 224-31 (Apr. 1948).

Results of experiments on the action of *M. Gypseum* and *Pseudomonas* on wool fibers show that the scale cells of the wool are not dissolved and that the intercellular substance and cortical cells are affected. The breaking strength of wet degraded wool is limited by the strength of the intercellular substance, while the tensile strength of dry degraded wool is determined by the strength of the cortical cells. TTD: 8-48

Fire resistant cellulose. Solid fire resistant cellulose compound. Jos. H. Klaber & Johan Bjorksten (to Quaker Chemical Products Corp.). USP 2 440 202, Apr. 20, 1948.

The incorporation of 1% to 12% of thiourea, or substituted thioureas containing at least 20% nitrogen, to cellulose derivatives is claimed to impart fire-resistance to the product.

GNR TTD: 8-48

Shrinkproofing knit fabrics. Tubular knit fabrics. Method and apparatus for finishing and shrinking textile fabrics. Frank R. Redman. USP 2 440 209, Apr. 20, 1948.

A method of finishing preshrunk, tubular knit fabrics which does not further stretch the fabric is described. The fabric is moistened with hot water or steam jets while being fed over a spreader in front of the nips of calendering rolls. Fabric is removed from the calendering rolls either by gravity or by stripper blades and passed through a slot into a drying chamber. The fabric is supported in the drying chamber by an apron whose

surface speed is somewhat less than the peripheral speed of the calendering rolls. As a result, the fabric is dried in a completely relaxed state before being batched.
VBS TTD: 8-48

FLAMEPROOFING TEXTILE FABRICS. Edited by Major Robt. W. Little. Reinhold Publishing Corp., New York; 1947; 410 pp.; price: $6.75.

Reviewed in *Modern Plastics 25,* No. 9, 144 (May, 1948). TTD: 8-48

TESTING AND ANALYSIS IX

Physical properties IX 1

Compressional behavior. Compressional behavior of textile materials. I. Measurement at constant rate of deformation. Rogers B. Finch, Mass. Inst. of Technology. *Textile Research J. 18,* 165-77 (Mar. 1948).

An instrument is described for measuring the compressional characteristics of materials at a constant rate of compression and recovery. General aspects of compressional behavior are also reviewed. TTD: 8-48

Compressional behavior. Compressional behavior of textile materials. II. Measurement of compressional stress relaxation at constant deformation. Rogers B. Finch, Mass. Inst. of Technology. *Textile Research J. 18,* 237-43 (Apr. 1948).

A description of an instrument, the procedure, and the interpretation of results for measuring the compressional stress-relaxation characteristics of textile materials at a constant compression. TTD: 8-48

Creep. Experimental study of creep of rayon. M. T. O'Shaughnessy, E. I. du Pont de Nemours & Co. *Textile Research J. 18,* 263-86 (May, 1948).

The experimental procedure, results, and theoretical considerations in the study of the creep behavior of Du Pont rayon and Cordura yarns are described. A graphical analysis of the resulting data is also given.
TTD: 8-48

Elastic performance. Mechanics of elastic performance of textile materials. I. Development of an elastic performance coefficient in tension. Walter J. Hamburger, Fabric Research Laboratories, Inc. *Textile Research J. 18,* 102-13 (Feb. 1948).

A normalized coefficient of elastic performance is derived which is applicable to all types of loading. A load-deformation diagram is required for the calculation of this coefficient for a particular loading. The tensional-elastic performance for continuous acetate rayon and fully drawn nylon is presented. TTD: 8-48

Fiber fineness. Permeability method for determining fiber fineness. John P. Elting & Jas. C. Barnes, Kendall Mills. *Textile Research J. 18,* 358-66 (June, 1948).

Fiber fineness can be determined by the use of a device consisting of a sample chamber which holds the fibers in a tightly compressed wad, an orifice which is used to determine the rate of flow of air through the fiber plug, and 2 pressure gages. Porosity of the plug, size, shape, and density of the fibers, and their effect on the fineness index are discussed. TTD: 8-48

Laboratory. Control laboratory can save money for a mill. Rudolph M. Ashner. *Textile World 98,* No. 7, 117, 119, July, 1948.

An adequate control laboratory, properly set up and under a supervision independent of mill functions can save a mill up to 6 times its cost per year. Standards and tolerances are fixed for each item to be controlled. Details of laboratory organizational setup, report writing, and equipment layout are given.
LCL TTD: 8-48

Moisture in fibers. Calculation of equilibrium moisture relations with particular reference to low temperature conditions. John C. Whitwell & David B. Willmer, Princeton Univ. & Textile Research Inst. *Textile Research J. 17,* 664-9 (Dec. 1947).

Equilibrium moisture calculations for textile fibers at temperatures below 20°C are made, based on theories which have been shown to be consistent with experiments. (See TTD: *3,* 422, 465; *4,* 283, 284.)
TTD: 8-48

Moisture register. Moisture register. Anon. *Chem. Eng. News 26,* No. 20, 1471 (May 17, 1948).

A pressurized moisture register for testing of moisture content of loose and compressible materials used in the textile industry is made by Moisture Register Co., 133 North Garfield Ave., Alhambra, Calif. The manufacturer states that the instrument, through deep penetration by high frequency fields, tends to average moisture content of the material being tested to a depth of 3 inches, in comparison with earlier electronic meters which were limited to testing material to a depth of 1 inch. Constantly duplicable readings are said to be obtained. Calibrations are available for wool in various forms; operators can establish their own calibrations for other materials. The average range of moisture covered is 0 to 15% on the basis of wet weight.
TTD: 8-48

Plastics. Properties of cellulose plastics. Marie Bentivoglio & Millard Demarest. *Product Eng. 19,* No. 5, 153, 155 (May, 1948).

The mechanical, thermal environmental, and electrical properties of the molded cellulosic plastics, cellulose

nitrate, acetate, acetate-hydrate, propionate, and ethyl cellulose, are tabulated. The effect of temperature on the tensile strength and elongation of cellulose acetate sheets is shown in a series of curves. Another series of curves shows how the elongation, distortion under heat, and the tensile, flexural, and impact strength of cellulose acetate vary with flow temperature. TTD: 8-48

Single fiber friction. Measurement of friction between single fibers. II. Frictional properties of wool fibers measured by fiber-twist method. Joel Lindberg & Nils Gralen, Swed. Inst. for Textile Research. *Textile Research J. 18,* 287-301 (May, 1948).

An apparatus, based on the principle of twisting 2 fibers together a certain number of turns and then drawing them apart, for measuring the frictional force between 2 single fibers is described. The measurement of the frictional properties of wool by this method and the development of the theory for measuring static and kinetic friction are discussed (for Part I, see TTD: *4,* 380). TTD: 8-48

Testing breaking strength. Effect of clamp design on fabric breaking strength. Warren T. Kelly & Margaret B. Hays, Aeronautical Materials Laboratory. *Textile Research J. 18,* 130-2 (Feb. 1948).

An investigation of clamp design effect on fabric breaking strength shows that the 2-inch fabric clamp does not give more accurate results than the 1-inch clamp, even though the number of jaw breaks was reduced 30%. TTD: 8-48

Testing equipment. Testing machines point way to progress. Job J. Mills. *Textile World 98,* No. 7, 129, 202-04, July, 1948.

Laboratory testing equipment is not being used to its greatest possible extent. The various instruments now developed for measurements of fibers should be studied to a larger degree for possible correlation with end product manufacture. Two other testing machines of interest are the lap meter for measuring the yard to yard weight of laps, and the graphic silver tester for measuring the variation in sliver and roving.
LCL TTD: 8-48

Testing knit fabrics. Simplified method for evaluating dimensional stability of tubular knit fabrics. Louis I. Weiner, Phila. Quartermaster Depot. *Textile Research J. 17,* 630-2 (Nov. 1947).

Errors in evaluating the shrinkage of tubular knit goods may be reduced by the use of a rotary drier and by measuring the fabrics after applying a bar device to product a constant tension. TTD: 8-48

Testing laminates. Cotton fabric laminates. R. K. Witt, P. D. Wolfe & D. M. Rust. *Modern Plastics 25,* No. 9, 123-5, 184-91 (May, 1948).

Samples of N. E. M. A. Grade L, a fine weave cotton fabric, and Grade C, a coarse weave cotton fabric from 11 different manufacturers were tested for the following properties: density, water absorption, compressive strength, modulus of elasticity, tensile strength, elongation in 2 min., tensile modulus of elasticity, flexural strength and maximum fiber stress, flexural modulus of elasticity, bearing strength, shear strength, and Izod impact strength. The results are tabulated as minimum, average, and maximum values. Flexural fatigue strengths and the effect of temperature on the properties of Grade L and Grade C laminates were also studied. A statistical analysis was made of the flexural test results on Grade L laminates. TTD: 8-48

Testing tire cords. Microscopical technique for determining latex distribution in tire cords. Ines V. de Gruy & Mary L. Rollins, Southern Regional Research Laboratory. *Textile Research J. 18,* 371-3, (June, 1948).

The use of Calogas Red for staining tire cord is described. By this dye-staining technique, the extent of penetration of latex in tire cords may be determined. TTD: 8-48

Testing viscosity. Rheological measurements with rotational viscometer. Earl K. Fischer & Chas. H. Lindsley, Inst. of Textile Technology. *Textile Research J. 18,* 325-37 (June, 1948).

Details of the modification of the Stormer viscometer are given which makes possible viscosity determinations over a wide range at variable rates of shear. Different types of flow properties may be identified and measured by this modified viscometer. Methods of computing apparent viscosity are described. TTD: 8-48

Textile microscopy. Longitudinal sectioning of cords and fabrics. T. L. W. Bailey, Jr., Inst. of Textile Technology. *Textile Research J. 17,* 655-63 (Dec. 1947).

Longitudinal sectioning provides a means of studying special fabric structures, the manner of fiber splicing in yarns, the relationship of the plies in cabled cords, etc. A method is given for making longitudinal sections of yarns, cords, and fabrics. TTD: 8-48

Textile testing. Testing procedure in cotton mills. Job J. Mills. *Am. Wool Cotton Reptr. 62,* No. 21, 79, 81 (May 20, 1948).

A lecture is given on the importance of testing procedures as an index of mill performance. A brief dis-

cussion of the lap meter and graphic sliver tester in cotton testing is made. TTD: 8-48

Textile testing. Textile testing in Germany. Herbert F. Schiefer, Natl. Bureau of Standards; Lyman Fourt, Harris Research Laboratories; Richard T. Kropf, Belding Heminway Corticelli Co. *Textile Research J. 17,* 689-713; *18,* 18-38, 89-101 (Dec. 1947; Jan., Feb.. 1948).

A comprehensive survey of the important developments in textile testing in Germany, with extensive bibliographies. The report is divided into 4 parts: tensile testing, serviceability evaluation of textiles, testing flexural and compressional properties, and miscellaneous testing (spinning tests, measurements on staple, etc.). TTD: 8-48

Treated wool fibers. Location of melamine resin in treated wool fibers. Fred T. Marshall & Sarah J. Aulabaugh, Monsanto Chemical Co. *Textile Research J. 17,* 622-4 (Nov. 1947).

By using Aqua Plastic Red as a staining medium it is possible, by means of a microscope, to determine the location of melamine resin in treated wool fibers. Results show that the melamine resin appears to be distributed uniformly within the wool fiber structure and does not cause any obvious change in scale structure of the wool fibers. TTD: 8-48

Water-resistant fabrics. Orifice test to evaluate yarns for swelling-type water-resistant fabrics. Herbert O. Smith, Alton L. Murphy & Chas. F. Goldthwait, Southern Regional Research Laboratory. *Textile Research J. 18,* 124-9 (Feb. 1948).

The orifice test is being used to predict the performance of water-resistant cotton fabrics whose utility depends on self-sealing by swelling. The method consists of observing the seepage of water under pressure through a bundle of yarn tightly packed in an orifice. TTD: 8-48

Yarn testing. A theory of commercial yarn testing. C. J. Geyer, Jr., Am. Viscose Corp., C. H. Reichardt, Textile Research Inst., & G. Halsey, Harvard University. *J. Applied Physics 19,* 5, 464-72 (May, 1948).

A method is discussed for applying the Eyring theory of the 3-element model for commercial textile testing. The method does not necessitate the location of the basic spring line and is applicable to both yarn and fiber tests. Involved is the magnitude of the creep in constant rate of loading experiments or the magnitude of the relaxation in constant rate of elongation experiments. ECH TTD: 8-48

Yarn testing. Theory of commercial yarn testing. Chas. J. Geyer, Jr., C. H. Reichardt, & Geo. Halsey, Textile Foundation, Princeton Univ. & Am. Viscose Corp. *Textile Research J. 18,* 338-50 (June, 1948).

A discussion of a method of applying the Eyring theory of the 3-element shear model to both yarn and fiber tests. The method does not necessitate the location of the basic spring line and may be used in routine laboratory tests on commercial yarn testers. TTD: 8-48

HIGH POLYMERS, VOL. VI. MECHANICAL BEHAVIOR OF HIGH POLYMERS. Turner Alfrey, Jr. Interscience Publishers, Inc., New York; 1948; 595 pp.; price $9.50.

Reviewed in *Gen. Elec. Rev. 51,* No. 5, 54 (May, 1948). TTD: 8-48

TEXTILE SERIES—REPORT No. 13: TEXTILE MICROSCOPY IN GERMANY. Textile Research Inst., New York; 147 pp; price: $5.50.

Reviewed in *Modern Plastics 25,* No. 3, 174 (Nov. 1947). TTD: 8-48

Chemical analysis IX 2

Cellulose crystallinity. Improvements in the acid-hydrolysis method of determining crystallinity of cellulose. Mary L. Nelson & Carl M. Conrad, Southern Regional Research Laboratory. *Textile Research J. 18,* 149-54 (Mar. 1948).

A revised procedure for the determination of crystallinity in cellulose is described which uses the acid-hydrolysis method with a 50% aqueous monoethanolamine solution as a solvent. This solvent removes the humic substances which are formed from the soluble hydrolysis products and interfere with the determination. TTD: 8-48

TEXTILE MILLS X

British textiles. Textiles the spearhead of Britain's export drive in 1948. Anon. *Board of Trade J. 154,* No. 2686, 1143 (June 12, 1948).

Plans for building up the textile industry, increasing the efficiency, selling, and attracting labor are discussed. TTD: 8-48

Cellulose acetate. Celanese Corp. Anon. *Fortune 33,* No. 5, 85-91, 182-8 (May, 1948).

In addition to the history of the Celanese Corp. of Am. and the development of cellulose acetate, the present set-up of the organization and pattern for the future are described. TTD: 8-48

DAVISON'S TEXTILE BLUE BOOK. Davison Publishing Co., Ridgewood, N. J.; 1947; 1298 pp.; price: $5.75; office edition, $8.25; executive's and salesman's directory (mills only) $4.50.

Reviewed in *Mech. Eng. 70,* No. 3, 265 (Mar. 1948). TTD: 8-48

TEXTILE BRAND NAMES DICTIONARY. The Textile Book Publishers, Inc., New York., 1947; 377 pp.; price: $6.00.

Reviewed in *J. Franklin Inst. 245,* No. 4, 352 (Apr. 1948). TTD: 8-48

YARN AND CLOTH CALCULATIONS. Lloyd H. Jackson. Textile Book Publishers, Inc., New York; 1947; 196 pp.; price: $6.00.

Reviewed in *J. Franklin Inst. 245,* No. 3, 260 (Mar. 1948). TTD: 8-48

Buildings, machinery, power X 1

Beam handling. Beam handling facilitated by fork truck. Jos. C. Moore. *Textile World 98,* No. 7, 125, July, 1948.

A special type of fork, attached to a normal, high-life truck, can be used to handle section beams with ease and reduce cost.
LCL TTD: 8-48

Bearing lubrication. Bearings and their lubrication. Frazier M. Edwards, Texas Co. *Am. Wool Cotton Reptr. 62,* No. 22, 13-14, 47 (May 27, 1948).

Instructions are outlined and discussed for the lubrication of all types of bearings in a textile mill with suitable oils or greases. TTD: 8-48

Lubrication. Departmental lubrication aided by general-purpose oil. Frazier M. Edwards. *Textile World 98,* No. 7, 145, 147, 196, 201, July, 1948.

Although many textile machines require special, specified oils, a good general-purpose oil can find many uses in the average mill. Generally, this oil should be from 300 to 500 sec. Saybolt at 100° F. Where specified oils are used in machinery, any substitutions must be made with extreme care. Lubrication problems of the various types of textile machinery are discussed with some detail.
LCL TTD: 8-48

Machinery and costs. Judge new machinery with realistic yardstick. Nathaniel M. Mitchell. *Textile World 98,* No. 7, 121, 194, 196, July, 1948.

New machinery operating at increased speeds will not guarantee low total costs per unit of production. Careful attention to labor allocation, material wastage, etc., is the only assurance of total low cost, regardless of the machinery used. A careful measurement of all phases of cost, prepared and considered before final purchase of new machinery, should always be undertaken.
LCL TTD: 8-48

Machinery lubrication. Lubrication of textile machines. Frazier M. Edwards, Texas Co. *Am. Wool Cotton Reptr. 62,* No. 24, 13-14, 49 (June 10, 1948).

Suggestions as to the types of lubricants and methods for lubricating textile machinery, includng cards, spindles, warpers, and looms, are given. TTD: 8-48

Machine parts. Textile mill problems solved. Anon. *Modern Plastics 25,* No. 6, 106-8 (Feb. 1948).

Plastic sheaves, separators and parts, which are described and illustrated, consist mostly of phenolic materials with cottonseed hulls as filler. Currently under development are temple rolls, pickers, shuttles, top rolls and other applications of plastics to textile machinery. TTD: 8-48

Modern building. Carpet-yarn mill—1947 model. Anon. *Eng. News-Record 140,* No. 2, 104-6 (Jan. 8, 1948).

The new carpet-yarn mill of James Lees & Sons Co., Glasgow, Va., is a windowless, one-story building, featuring functional painting, tunnels for air and utilities, hung ceilings and parquet floors. It is air-conditioned and well-lighted. Materials handling is mechanized to the fullest extent. TTD: 8-48

Preserving timbers. Treated wood combats mill decay. R. H. Bescher. *Textile World 98,* No. 7, 131, July 1948.

The high humidity of most mill operations is harmful to the wood in the structure. Cromated zinc chloride is an effective preservative. This and other treatments should be considered for protection of wood in mill structures.
LCL TTD: 8-48

Recorder. The Hasler central recording device. A. Stamm. Societe Hasler, Berne, Switzerland. *Textielwezen 3,* 145-48 (Sept. 1947).

The device can be applied in all mechanical and textile industries, especially to spinning, twisting, weaving, and finishing cotton, wool, linen, and artificial fibers. It is a control apparatus which can be used to supervise and increase production and gives a continuous and indisputable record of the operation of the machine and the personnel. It gives the answer to questions concerning the distribution of production among the ma-

chines, the economy of the equipment, and changes and improvements in the equipment. TTD: 8-48

Textile plant. A visit to Utexleo. A. van Cauwenberghe. *Textielwezen 3,* 121-25 (Sept. 1947).

Utexleo is an abbreviation for Usines Textiles de Leopoldville in the Belgian Congo. Triumph Cotton has been used mostly, but Stoneville and Gar 33 are being processed. American machinery has been installed to expand production. The advantages of the new equipment over the old equipment are listed. TTD: 8-48

Fibrous roofing. Water repellent roofing. Chas. M. Baskin (to Standard Oil Development Co.). USP 2 438 890, Apr. 6, 1948.

Bitumen-saturated fibrous roofing materials are covered with a mixture of pulverized asphalt and powdered stearic acid or its calcium salt in order to increase the water-repellency of the surface.
MC TTD: 8-48

Lighting and air X 2

Ventilation. New ventilation method aids boarding room. C. Mallard Bowden. *Textile World 98,* No. 7, 108-09 (July, 1948).

Improved boarding room production and employee comfort have been obtained at the Crown Hosiery Mills, High Point, N. C., by a new ventilating system. In addition to the customary removal of hot air, fresh air is also brought into this room by forced ventilation at a rate sufficient to produce one complete change per minute.
LCL TTD: 8-48

Air conditioning equipment. Air conditioning apparatus. Agnew H. Bahnson, Jr. USP 2 440 627, Apr. 27, 1948.

Claims are made for an air conditioning apparatus assembled within a sheet metal duct. This apparatus comprises a fan, Bahnson humidifier, filter arrangement to collect unvaporized water, and suitable control equipment.
AFR TTD: 8-48

Drying compressed air. Air-drying apparatus. Norman G. Cadman (to The Westinghouse Air Brake Co.). USP 2 440 326, Apr. 27, 1948.

Moisture is removed from compressed air used for operating fluid pressure apparatus by passing the air through silica gel which is capable of absorbing moisture and can be regenerated by heating. A system is described in which the silica gel is enclosed in a casing within which is embedded a heater of multi-tubular construction for regenerating the silica gel. TTD: 8-48

Gas concentration indicator. Method of and apparatus for indicating the condition of an atmosphere. Wm. F. Ertzman (to The Brown Instrument Co.). USP 2 438 550, Mar. 30, 1948.

A method and apparatus for indicating the presence of a particular gas or vapor in an atmosphere containing a plurality of different gases or vapors are described. An AC as well as a DC potential is applied to the plates of a bridge condenser. The potential variations near ionization levels of the gases can be utilized as a measure of the concentration of gas or vapor under investigation.
WGM TTD: 8-48

Hazards; operations; efficiency X 4

Fire hazards. Common cotton mill fire hazards. C. Frederick Hedlund, Associated Factory Mutual Fire Insurance Co. *Am. Wool Cotton Reptr. 62,* No. 23, 17-18 (June 3, 1948).

Causes of and methods for preventing electrical fires in cotton mills are briefly reviewed. TTD: 8-48

Handling resins. Hints on avoiding dermatitis in handling textile resins. J. O. Hamblin, Am. Cyanamid Co. *Textile Age 12,* No. 2, 80-2 (Feb. 1948).

By adequate ventilation, thorough cleanliness, and a minimum of contact, skin irritations from resins used in processing fabrics may be avoided. Suggested methods for control of dermatitis in mills are enumerated.
TTD: 8-48

BASIC SCIENCES XI

Cellulose crystallinity. Effect of grinding or crystallinity of cellulose fibers, as indicated by acid-hydrolysis and other techniques. Mary L. Nelson & Carl M. Conrad, Southern Regional Research Laboratory. *Textile Research J. 18,* 155-64 (Mar. 1948).

Cotton fibers, when ground in a Wiley mill, show a reduction in their degree of crystallinity as determined by the acid-hydrolysis method. Even mild grinding causes a drop in the degree of crystallinity, and more severe grinding increases the drop correspondingly.
TTD: 8-48

Cellulose derivatives. Some applications of ultracentrifugation to the study of salts of cellulose glycolic acids. M. Banderet. *J. chim. phys. 44,* Nos. 1-3, 52 (Jan.-Mar. 1947).

An aqueous solution of 2 samples of sodium cellulose glycolate, containing 0.9 OCH_2 CO_2 Na per glucose unit, were prepared by the action of monochloracetic

acid on more or less degraded alkali cellulose. The solution consisted of a micellar fraction dispersed in a molecularly dissolved fraction. The micellar fraction was precipitated by means of the ultracentrifuge. The amount of substitution in the OCH_2 CO_2 Na group of the precipitate was the same as that in the non-precipitate, and both portions were found to have the same constants of sedimentation and diffusion. Both portions were completely solubilized by formation of their nitrate esters, after which the OP's were determined and found to be identical. From viscosity measurements, both (n) and (n) at O concentration were calculated.
TTD: 8-48

Cellulose derivatives. The phenomena of solvation and swelling of cellulose derivatives. J. Champetier & P. Clement. *J. chim. phys. 44,* Nos. 6-7, 121-34 (June-July, 1947).

It is shown that the different states of swelling in polymers of strong polarity, such as cellulose derivatives, should be linked with solvation reactions. These reactions are developed, to the detriment of the intermacromolecular association forces, as much in the presence of swelling agents as in the presence of gelatinization agents, solvents, or binary solvent mixtures. The last case corresponds to mixed solvation in which the steric factor of the molecules of the indirect solvent intervenes. The mechanism of the different types of plastification are discussed. TTD: 8-48

Cellulose derivatives. Crystal structure of cyanoethyl cellulose. F. Happey & J. H. MacGregor. *Nature 160,* No. 4078, 907 (Dec. 27, 1947).

X-ray studies of cyanoethyl cellulose filaments, made from products of varying cyanoethyl content, indicated one chain per unit cell, containing 3 consecutive trycyanoethyl glucose residues arranged on a 3-fold spiral along the fiber axis. This structure may be only a submultiple of a larger cell. TTD: 8-48

Cellulose derivatives. The mechanism of lyotropic action. F. Boyer-Kawenoki & M. J. Duclaux. *J. chim. phys. 44,* Nos. 8-9, 202-5 (Aug., Sept., 1947).

One form of lyotropic action is the solubilization of insoluble substances by means of aqueous solutions of salts. A number of compounds, including ethyl-, benzyl-, trinitrocellulose, and cellulose butyrate were studied in this respect. Their hydrophilic indices, as well as those of the solubilizing salts, are tabulated. This solubilizing action is not attributed to the formation of complexes, but rather to a modification of the properties of the water. This modification could be due to a particular structure of the saline molecule.
TTD: 8-48

Cellulose fibers. Ratio of the crystalline and amorphous regions in cellulose fibers. P. H. Hermans. *J. chim. phys. 44,* Nos. 6-7, 135-40 (June-July, 1947).

Chemical methods of determining the crystalline-amorphous ratio were rejected as unreliable. Agreement was found in the results of such physical methods as sorption capacity, density, orientation rate, heat of wetting, and quantitative evaluation of x-ray diagrams. The percentages of crystalline portion in natural ramie, wood pulp, and rayon were found to be 60%, 50%, and 25% respectively. TTD: 8-48

Cellulose fibers. Crystallinity of cellulose fibers as determined by acid hydrolysis. Howard J. Philipp, Mary L. Nelson & Hilda M. Ziifle, Southern Regional Research Laboratory. *Textile Research J. 17,* 585-96 (Nov. 1947).

The procedure for determining the crystallinity of cellulose fibers by acid hydrolysis, based on the theory that amorphous portions of cellulose hydrolyze rapidly and the crystalline portions hydrolyze more slowly, is described. Results correlate very well with the crystallinity data obtained from x-ray diffraction patterns.
TTD: 8-48

Cellulose gels. Deformation of cellulosic gels: network of chains with very little flexibility. J. J. Hermans. *J. chim. phys. 44,* Nos. 6-7, 117-20 (June-July 1947).

A theory of networks consisting of chains with a small number of links has been built up and compared with results of tests on cellulose fibers. Reasons are given why the theory of affined deformation cannot be applied to short chains. The chain network theory is compared with that of Kratky. TTD: 8-48

Chain molecules. Theory of the thermodynamic properties of chain molecules. Maurice L. Huggins. *J. chim. phys. 44,* Nos. 1-3, 9-15 (Jan.-Mar. 1947).

A simple method is given for deriving equations for the entropy of a mixture and for the activities of the solvent in a solution of "statistical" chain molecules, having no heat of mixture. Modifications which should be made in the case of solutions having finite heats of mixture are briefly discussed. Equations are also derived for large spherical molecules and these are compared with the equations of Raoult's law and with those of "statistical" chain molecules. TTD: 8-48

Chain molecules. A method for interpreting the properties of solutions containing chain molecules at very high dilution. Chas. Sadron. *J. chim. phys. 44,* Nos. 1-3, 22-36 (Jan.-Mar. 1947).

Since the kinetic properties of a solution of macromo-

lecular chains (Brownian movement, intrinsic viscosity, etc.) are analogous, under certain conditions, to those of a solution of rigid macromolecules, a search has been made for the dimensions of the rigid particles which, at infinite dilution, have the same diffusion constant and intrinsic viscosity as a monodispersed solution of chain molecules. This rigid particle is called the particle equivalent to the molecular chain. A relationship has been established between the dimensions of the equivalent particle and the characteristics of the chain (degree of polymerization, energy of interaction between the units, steric hindrance, and structure). According to this theory, the general form of a curve can be established which shows the specific viscosity and diffusion constant as functions of the degree of polymerization, of the temperature and of the nature of the solvent. TTD: 8-48

Coiled molecules. Note on volume effect in coiling molecules. Robt. Simha. *J. Research Natl. Bur. Standards 40,* No. 1, 21-3 (Jan. 1948).

An estimate of the magnitude of the interference effect in a coil-like molecule is made by calculating the nearest neighbor density w around a given link as a function of the total number of contributing chain units. It is shown, for instance, that in a chain consisting of several hundred units, the first 15 contribute about 75% of the total nearest neighbor density at distances below the length of a link. The plots presented indicate that, after about the first 20 links, the rate of increase of nearest neighbor density begins to flatten off. It is also possible to derive the modification of the distribution function of chain-ends in real chains for a given form of w.
TTD: 8-48

Detergency. Detergency studies. Wm. P. Utermohlen, Jr. & E. Louise Wallace, Inst. Textile Technology. *Textile Research J. 17,* 670-88 (Dec. 1947).

A discussion of the experiments and the results obtained in the study of the mechanisms of soiling of cloth, washing soiled cloth, and the influence of the soiling mixture and storage conditions on the ease of washing.
TTD: 8-48

Dissolving macromolecules. Reactions of colloidal chemistry. The mechanism of the passage of polymers into solution. Marcel Mathieu. *J. chim. phys. 44,* Nos. 6-7, 154-64 (June, July, 1947).

A review of the colloidal chemistry of such materials as cellulose derivatives, plastics, proteins, soaps, and clay, with 24 references. TTD: 8-48

Dynamic stretch properties. Method for the absolute measurement of dynamic properties of linear structures at sonic frequencies. W. J. Lyons & I. V. Prettyman, The Firestone Tire & Rubber Co. *J. Applied Physics 19,* 5, 473-80 (May, 1948).

Electromagnetic excitation is employed to determine the dynamic stretch modulus, coefficient of internal friction, and hysteretic energy loss of textile yarns and cords composed of either continuous filaments or staple fibers. The frequency range used extends to 300 cycles per sec.
ECH TTD: 8-48

Fiber crystallinity. Quantitative x-ray investigations on the crystallinity of cellulose fibers. P. H. Hermans & A. Weidinger, Laboratory for Cellulose Research of the AKU and Affiliated Companies, Utrecht, Netherlands. *J. Applied Physics 19,* 5, 491-506 (May, 1948).

A comparison of the intensity of the diffuse and peaked intensities of x-rays scattered from speciments of fibers with randomized orientation is used to determine the ratio of crystalline to amorphous portions of the fibers. Both natural and artificial fibers are investigated. The absolute percentage of the crystalline portion calculated from the experimental data is 70% for native fibers and 39% for the rayons.
ECH TTD: 8-48

Fiber structure. X-ray investigation of the structure of jute. M. K. Sen & H. J. Woods. *Nature 161,* No. 4098, 768 (May 15, 1948).

The effect of the non-cellulosic constituents of jute on some of the structural features of the fiber was studied by means of x-ray. Equatorial reflections of spacings 9.7 A and 14.6 A were observed, which are not accepted cellulose spacings. The spacings are apparently associated with the presence of lignen, xylan and polyuronides. The reflections are affected in intensity by humidity appearing at their strongest in wet fibers. TTD: 8-48

High polymers. Investigation of relationship between polymer structure and mechanical properties. I. Relationship between structure, mechanical properties, and birefringence. Richard S. Stein & Arthur V. Tobolsky, Textile Foundation & Princeton Univ. *Textile Research J. 18,* 201-23 (Apr. 1948).

Variations in mechanical properties of high polymers are associated with changes in the structure occurring under different conditions. The nature of stress and birefringence in polymers are discussed, together with the prevailing theories, and the technique of measuring stress and birefringence for time-dependent behavior is discussed. TTD: 8-48

High polymers. Investigation of relationship between polymer structure and mechanical properties. II.

Experimental study of stress and birefringence properties of several relaxing polymeric systems. Richard S. Stein & Arthur V. Tobolsky, Textile Foundation & Princeton Univ. *Textile Research J. 18,* 302-14 (May, 1948).

Relaxation experiments on a series of polymeric materials ranging in properties from rubbers to polycrystalline plastics are described, and the relation of stress-birefringence behavior of these materials and their structure is discussed. TTD: 8-48

Keratin. Multi molecular absorption. II. A. B. D. Cassie. *Trans. Faraday Soc. 43,* No. 10, 615-20 (Oct. 1947).

It is shown that the multimolecular absorption isotherm proposed by Brunauer, Emmett & Fuller is only applicable to systems where absorption occurs as distinct clusters of molecules; it is not applicable to multimolecular absorption as continuous layers superposed on a continuous monolayer. Some effects of surface energies in multimolecular absorption are discussed and it is shown that the water repellency of keratin is not inconsistent with its absorption of water vapor.
TTD: 8-48

Nitrocellulose. Birefringence of efflux in polydispersed media. R. Singer & H. Liechti. *J. chim. phys. 44,* Nos. 4-5, 58-65 (Apr.-May 1947).

From measurements made on nitrocellulose, it was concluded that the birefringence and the angle of orientation indicate qualitatively the degree of polydispersion of the nitrocellulose. TTD: 8-48

Phosphorylated cotton. Phosphorylated cotton cellulose as cation-exchange material. Julian F. Jurgens, J. David Reid & John D. Guthrie, Southern Regional Research Laboratory. *Textile Research J. 18,* 42-4 (Jan. 1948).

Phosphorylated cotton cellulose made by the phosphoric acid-urea method has a high cation-exchange capacity and shows good flow characteristics in the calcium-hydrogen cycle when used in the form of a coarse fabric. Specialized use for this cotton in fabric form may be found. TTD: 8-48

Polyamide crystallinity. A few experiments on crystallinity of polyamides. M. E. Bergmann, I. Fankuchen & H. Mark, Inst. of Polymer Research. *Textile Research J. 18,* 1-8 (Jan. 1948).

Experiments are described on the swelling and crystallizing of nylon samples in a dilute aqueous phenol solution. A discussion of the results of examining the degree of crystallinity, preferred orientation, and mechanical properties is also given. TTD: 8-48

Regenerated cellulose. Structure and properties of regenerated cellulose. W. E. Rossveare, R. C. Waller & J. N. Wilson, E. I. du Pont de Nemours & Co. *Textile Research J. 18,* 114-23 (Feb. 1948).

The probable mechanism by which the crystallites of regenerated cellulose are formed, the structure resulting from this mechanism, and the properties of cellulose in terms of this network structure are discussed.
TTD: 8-48

Thermodynamics. The thermodynamics of a strained elastomer. I.—General Analysis. M. Mooney, U. S. Rubber Co. *J. Applied Physics 19,* 5, 434-44 (May, 1948).

General thermodynamic equations for strained elastomers are developed. It is pointed out that the functions of principal interest are the entropy and energy of deformation, the volume being of secondary importance.
ECH TTD: 8-48

Thermodynamics. The thermodynamics of a strained elastomer. II.—Compressibility. L. E. Copeland, U. S. Rubber Co. *J. Applied Physics 19,* 5, 445-9 (May, 1948).

Adiabatic compressibility coefficients were measured on a series of cured polymers of commercial types under pressures up to 5000 lb/psi.
ECH TTD: 8-48

Thermodynamics. The thermodynamics of a strained elastomer. III.—Thermal coefficient of modulus and the statistical theory of elasticity. L. E. Copeland & M. Mooney, U. S. Rubber Co. *J. Applied Physics 19,* 5, 450-5 (May, 1948).

The data published in the article, "The Thermodynamics of a Stained Elastomer, II.—Compressibility" by L. E. Copeland are analyzed by means of equations developed in the article, "The Thermodynamics of a Stained Elastomer, I.—General Analysis" by M. Mooney.
ECH TTD: 8-48

Ultrasonic waves. The action of ultrasonics on macromolecules. P. Grabar & R. O. Prudhomme. *J. chim. phys. 44,* Nos. 6-7, 145-53 (June-July 1947).

The effect of ultrasonics on synthetic polymers, polyoses (including cellulose derivatives), proteins, and diastases are reviewed. There are 49 references. TTD: 8-48

Viscoelastic systems. Thixotropic viscoelastic systems. Basil A. Dunell & Geo. Halsey, Textile Foundation & Princeton Univ. *Textile Research J. 18,* 178-86 (Mar. 1948).

A discussion of an investigation of the potential energy of the surfaces of certain fibers in relation to the viscous

flow within the fiber and their thixotropic behavior when stretched. TTD: 8-48

Viscosity. Some new anisotropic time effects in rheology. S. M. Freeman & K. Weissenberg. *Nature 161,* No. 4087, 324-5 (Feb. 28, 1948).

Anisotropic time effects were produced during transitions between shear-free and sheared states in isotropic materials of the visco-elastic type, such as liquid and solid colloids containing rubber, plastes of starch, cellulose acetate, etc. The apparatus used was a modified rheogoniometer specially designed to impose on a material laminar shearing displacements and to measure along various directions in space the development of the stresses with time. TTD: 8-48

Water adsorption. Adsorption of water by swelling high polymeric materials. Howard J. White, Jr. & Henry Eyring. *Textile Research J. 17,* 523-53 (Oct. 1947).

The water-adsorption properties of some high polymeric materials, including most textile fibers, are discussed with an outline of the data on the various phenomena associated with these properties. Previous theories are reviewed, and a new theory of the adsorption isotherm is derived. A discussion of adsorption hysteresis in terms of the new theory and a discussion of the isotherm constants are also given. TTD: 8-48

Water sorption. Effect of acetylation on sorption of water by cellulose. Sam R. Hoover & Edw. F. Mellon, Eastern Regional Research Laboratory. *Textile Research J. 17,* 714-16 (Dec. 1947).

By recalculating the data of Sheppard and Newsome on the water absorption of cellulose esters it is found that the water uptake of cellulose is not diminished by acetylation. A dilution effect causes the apparent decrease. TTD: 8-48

Viscosity-responsive valve. Viscosity-responsive valve. Cecil C. Higgens (to The Eyre Smelting Co., Ltd.). USP 2 434 799, Jan. 20, 1948.

A valve is designed to regulate the pressure in a hydraulic system, such as the lubrication circuit of an internal combustion engine, in order to secure a constant flow, irrespective of changes in viscosity of the fluid. VMG TTD: 8-48

CHEMICAL ASPECTS OF LIGHT. E. J. Bowen. 2nd Edition. Oxford University Press, New York, 1946; 200 pp.; price $6.00.

Reviewed in *Textile Research J. 18,* 374 (June, 1948). TTD: 8-48

ELSEVIER'S ENCYCLOPEDIA OF ORGANIC CHEMISTRY, VOL. XIV: TETRACYCLIC AND HIGHER-CYCLIC COMPOUNDS. Series III: Carboisocyclic condensed compounds. Edith Josephy & F. Radt, Editors. Elsevier Publishing Co., Inc., New York & Amsterdam, 1947; 731 pp.; price: $60.00.

Reviewed in *Textile Research J. 18,* 245 (Apr. 1948). TTD: 8-48

ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY, VOL. I: A TO ANTHRIMIDES. R. E. Kirk & D. F. Othmer, Editors. Interscience Encyclopedia, Inc., New York, 1947; 1006 pp.; price: $20.00.

Reviewed in *Textile Research J. 18,* 246 (Apr. 1948). TTD: 8-48

ORGANIC CHEMISTRY. Paul Karrer. 2nd ed. Translated by A. J. Mee & M. F. Darken. Elsevier Publishing Co., Inc., New York, 1946; 973 pp.; price $7.50.

Reviewed in *Textile Research J. 17,* 577 (Oct. 1947). TTD: 8-48

ORGANIC CHEMISTRY. Paul Karrer. 3rd edition. Translated by A. J. Mee. Elsevier Publishing Co., Inc., New York, 1947; 957 pp.; price: $8.50.

Reviewed in *Textile Research J. 18,* 315 (May, 1948). TTD: 8-48

TEXTILE CHEMISTRY AND DYEING, I: CHEMICAL TECHNOLOGY OF FIBERS. 10th Ed. Louis A. Olney. Lowell Textile Associates, Lowell, Mass., 1947; 209 pp.; price: $3.00.

Reviewed in *Textile Research J. 18,* 245-6 (Apr. 1948). TTD: 8-48

PHYSICAL SCIENCE IN ART AND INDUSTRY. E. G. Richardson. 2nd ed. English Universities Press; 1946; 299 pp.; price: 15s. A section on textiles is included.

Reviewed in *Phil. Mag. 39,* No. 288, 87 (Jan. 1948). TTD: 8-48

TEXTILE RESEARCH XII

Advisory board. Scheme for development council for cotton iudustry. Anon. *Board of Trade J. 154,* No. 2664, 55 (Jan. 10, 1948).

A Development Council for the Cotton Industry has been proposed by the Board of Trade in Great Britain. It will cover the spinning of yarn from cotton and rayon fiber and the weaving, finishing, making up, packing, and converting of fabrics made from such yarn and from continuous-filament rayon yarn. Its function will be to assist and advise firms in the industry. TTD: 8-48

Resilience. Generalized concept of resilience. R. M. Hoffman, E. I. du Pont de Nemours & Co. *Textile Research J. 18,* 141-8 (Mar. 1948).

A discussion of the various concepts of resiliency with the following proposed definition given: "Resiliency is a stress-strain-time property of a material, characterizing the completeness of recovery from deformation and varying in kind with the modulus of elasticity and the rate of recovery." TTD: 8-48

Textile research. Research is aiding in development of southern textile industries. Anon. *Textile Age 12,* No. 2, 31, 34, 36, 38, 43, 46 (Feb. 1948).

Development of the Industrial Research Institute of the University of Chattanooga, a non-profit organization founded in 1945 to aid in developing southern industries, is reviewed. Research problems of wool, cotton, nylon, rayon, glass fibers, etc. are being investigated by the Institute. TTD: 8-48

Textile research. The laboratory in the service of the textile industry. D. de Meulemeester, Univ. of Ghent & G. Raes, Lab. for the Technology of Textile Materials. *Textielwezen 3,* No. 9, 99-109 (Sept. 1947).

Research institutes have been established for the textile industry in most industrial countries, but almost nothing has been done in Belgium. The Laboratory of Industrial Mechanics and Technology of Textile Materials at the University of Ghent has done some significant work, however, in spite of the lack of personnel. A textile institute like those in other countries should be established. TTD: 8-48

Textile research. D. H. Powers, Monsanto Chemical Co. *Chem. Eng. News 26,* No. 20, 1442-3 (May 17, 1948).

The development of mildewproof, fireproof, and waterproof tentage, tough, strong, and weather resistant windbreaker fabrics, and shrinkproof woolens during the war is described. Methods of testing wear-resistance, crush resistance, and the need for methods of testing draperies and clothing are also discussed. TTD: 8-48

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